Household Income Determination in Vietnam: A Structural Analysis with Implications for Market Reform

Tarp, Finn and Roland-Holst, David
NIAS and CIEM

2002

Central Institute for
Economic Management

Nordic Institute of
Asian Studies

DISCUSSION PAPERS IN ECONOMIC POLICY ANALYSIS

Household Income Determination in Vietnam: A Structural Analysis with Implications for Market Reform

Finn Tarp[†]
Nordic Institute of Asian Studies (NIAS)
and
Central Institute of Economics Management (CIEM)

David Roland-Holst
Mills College

Discussion Paper No. 0203

CENTRAL INSTITUTE FOR ECONOMIC MANAGEMENT
68 Phan Dinh Phung Street
Hanoi, Vietnam
Tel: (84-4) 8.437 461
Fax: (84-4) 8.456 795
Web: www.ciem.org.vn

Household Income Determination in Vietnam: A Structural Analysis with Implications for Market Reform

Finn Tarp[†]
Nordic Institute of Asian Studies (NIAS)
and
Central Institute of Economics Management (CIEM)

David Roland-Holst
Mills College

ABSTRACT

Over two-thirds of Vietnam's population reside in the rural sector, and recent economic reform initiatives may not realize their full potential to benefit the rural sector if rural links to the rest of the economy are too weak. In this paper, we demonstrate how multiplier decomposition methods can elucidate the complexities of income determination, and in particular the prominent role played by indirect linkages that depend upon market interation. Techniques like this can help identify opportunities for policy makers to facilitate economic integration and more widely propagate the benefits of economic reform and growth.

[†] Finn Tarp is Associate Professor of Economics at the University of Copenhagen and presently Senior NIAS Researcher at CIEM in Hanoi. David Roland-Holst is the James Irvine Professor of Economics at Mills College. Special thanks to John Rand and Henning Tarp Jensen for expert research assistance. Opinions expressed here are those of the authors and should not be attributed to their affiliated institutions.

1. Introduction

Vietnamese economic reform, including more emphasis on participation in external markets, is expected to accelerate domestic growth and modernization and lead to substantial improvements in material living standards. Despite generally positive expectations about this process, however, it is reasonable to look more closely at its distributional consequences. History reminds us again and again that the aggregate welfare gains from partial or complete trade liberalization often mask compositional shifts which fall unequally on different groups in society.

To assess the distributional implications of Vietnam's commitment to reform and growth, we use the social accounting matrix (SAM) as a universe of discourse. This disaggregated accounting device has been popularized in recent years as an elaboration of input-output methods, incorporating more extensive income and expenditure linkages and more flexible accounting conventions than its predecessor. The SAM provides closed form, economywide accounting of linkages between activities (and/or commodities), factors, households, domestic institutions (e.g. investment, government), and foreign institutions in a tabular format that is transparent and amenable to multiplier analysis similar to that popularized by Leontief (1953).[1]

In this paper, we present results from a new Vietnam SAM, estimated for the year 2000.[2] To it we apply multiplier decomposition methods that are designed to elucidate the interactions between domestic groups that give rise to the process of economywide income generation. Our results indicate that the full incidence of government policies and trade expansion can only be ascertained by taking account of extensive indirect linkages. In some cases, over three quarters of the total household income generated by sectoral demand stimulous arises from indirect sources. This fact has two important implications for policy. Firstly, the prominent role of indirect effects strongly reinforces the rationale for market reform as a means of spontaneously propagating growth effects. Secondly, it is apparent from our estimates that the ultimate effects of direct fiscal or trade stimulous will be quite difficult to anticipate by intuition alone. Significantly, however, we find that the income growth potential of the rural and urban populations is comparable under broadly

[1] Background references on SAM methodology are Pyatt and Round (1985) and Reinert and Roland-Holst (1997)

based reform scenarios. In particular, it is apparent from our results that policies facilitating more extensive market participation will benefit both groups about equally.

In the next section, we apply a methodology for block decomposition of multipliers and use it for incidence analysis with the new Vietnam SAM. Section 3 then extends this analysis with path decomposition methods to trace more detailed channels of income-expenditure in the economy. The fourth and final section provides concluding remarks, policy implications, and some indications about how the present work might be extended.

2. Decomposition of Domestic Income and Expenditure Linkages

Empirical work on economic dualism has historically been divided between three areas, economywide growth models, partial equilibrium sector analysis, and neoclassical approaches to microeconomic institutions, particularly in the rural sector. In this section, we take a slightly different approach, using accounting information directly to evaluate detailed income-expenditure linkages within Vietnam and with respect to external trade.

Consider the Vietnamese Economy as represented in the 2000 SAM in Table 2.1. In this table, twenty production activities are represented. These have been consolidated from 97 sector/commodity use and make tables for the same year. We have consolidated out the commodity accounts in the underlying input-output table with reduced form techniques like those discussed in Pyatt (1985). We also distinguish four factors of production (from 14 in the original SAM), and two types of Vietnamese households (from 16) according to the rural and urban location. In addition to factors and households, there are three enterprise accounts, representing private domestically owned firms, private foreign firms, and state owned enterprises (SOEs). There are five other domestic institutions, one for savings-investment activities, three government accounts delineating producer, consumer, and trade taxes, and general government income and expenditure. The disaggregation of the main types of market taxes will clarify their incidence on domestic households and its distributional implications. The last group of accounts is for foreign trading partners, here aggregated from 94 in the original SAM to one ROW composite.

---

[2] See Tarp, Roland-Holst, Rand, and Jensen (2002) for complete documentation.

Table 2.1: Social Accounting Matrix for Vietnam, 1999

(billions of current Dong)

	A01Rice	A02Coffee	A03OthCrp	A04LivStk	A05OthAg	A06Fishry	A07Energy	A08OthMin	A09ProcFd	A10MatMfg	A11Chemcl	A12TechMfg	A13MachMfg	A14TxtAprl	A15OthInd	A16ElGsWat
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 A01Rice	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 A02Coffee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 A03OthCrp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 A04LivStk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 A05OthAg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 A06Fishry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 A07Energy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 A08OthMin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 A09ProcFd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 A10MatMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 A11Chemcl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 A12TechMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 A13MachMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 A14TxtAprl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 A15OthInd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16 A16ElGsWat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 A17Construct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 A18TradeTrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 A19PrivSrv	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 A20PubServ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 C01Rice	14379	0	0	3225	0	0	0	0	35601	0	0	0	0	0	87	0
22 C02Coffee	0	28	0	0	0	0	0	0	252	0	0	0	0	0	0	0
23 C03OthCrp	43	2	7413	2410	11	6	0	0	5919	19	263	1	2	943	1128	0
24 C04LivStk	63	0	0	61	25	5	0	0	1468	1	1	0	0	22	2	0
25 C05OthAg	2990	81	366	687	4	76	54	41	3	4397	49	0	9	9	1	8
26 C06Fishry	0	0	0	264	0	2746	0	0	4643	0	275	0	0	0	0	0
27 C07Energy	88	1	17	108	0	11	500	36	43	719	240	20	29	24	8	188
28 C08OthMin	123	1	23	23	14	19	6	129	19	2267	375	0	296	14	119	12
29 C09ProcFd	506	2	27	33	102	120	2	324	5566	68	45	0	15	54	565	20
30 C10MatMfg	353	11	84	218	283	228	86	204	813	8948	450	135	232	587	409	40
31 C11Chemcl	8181	1557	736	372	101	330	608	1287	1294	1788	6859	1630	184	2066	5111	174
32 C12TechMfg	132	1	31	0	56	18	159	60	32	159	30	2085	147	59	153	1912
33 C13MachMfg	566	38	273	96	1406	178	156	3889	977	1105	421	454	7256	490	1285	674
34 C14TxtAprl	461	9	53	17	9	102	36	31	216	274	58	5	40	10555	391	177
35 C15OthInd	8	49	1443	2883	2925	1806	66	542	371	567	138	129	144	783	970	237

		A01Rice	A02Coffee	A03OthCr	A04LivStk	A05OthAg	A06Fishry	A07Energy	A08OthMi	A09ProcFc	A10MatMf	A11Chemc	A12TechM	A13MachN	A14TxtAp	A15OthInd	A16ElGsW
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
36	C16ElGsWat	99	9	72	65	274	77	115	463	792	1632	502	66	458	1304	245	1629
37	C17Construct	176	3	47	12	145	23	123	72	102	114	23	5	32	94	32	160
38	C18TradeTrans	1888	100	410	966	281	624	598	1628	13211	3086	1076	303	639	1654	708	258
39	C19PrivSrv	285	32	70	39	128	941	1087	1183	718	794	394	213	286	892	325	88
40	C20PubServ	163	8	30	10	28	21	10	27	132	79	34	16	46	91	28	46
41	L01UrbUnSkld	501	1016	8616	4811	2027	1663	1893	1145	4400	2634	1349	577	1946	1314	1740	6275
42	L02UrbMidSkld	5183	229	126	1269	134	991	912	324	1253	792	410	491	486	435	677	651
43	L03UrbHiSkld	696	46	671	233	29	194	205	79	257	214	118	95	156	128	192	140
44	L04RurUnSkld	12350	893	8253	4618	1942	7844	940	331	4629	1273	654	254	667	2951	1080	571
45	L05RurMidSkld	5170	194	45	1000	106	824	185	59	1046	293	177	105	197	805	285	130
46	L06RurHiSkld	628	41	478	209	26	174	45	12	243	87	54	39	67	258	87	47
47	Capital	1070	544	1136	693	105	1073	21632	901	7101	6263	1578	557	1566	5620	1736	2499
48	H01RurFarmer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	H02RurSelfEmp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	H03RurWage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	H04UrbSelfEmp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	H05UrbWage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	E01StateEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	E02PrivDomEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	E03PrivForEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	VAT	2527	222	1731	994	356	544	1339	110	1153	553	210	114	198	505	323	492
57	Mduty	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	Xduty	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	State	811	71	556	319	159	272	670	55	577	276	105	57	99	252	162	246
60	CapAcc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	ASEAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	OthEAsia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	Americas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	EU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	59441	5188	32707	25634	10676	20913	31427	12933	92830	38403	15887	7351	15195	31910	17847	16674

Table 2.1:

		A17Constr	A18TradeT	A19PrivSr	A20PubSe	C01Rice	C02Coffee	C03OthCr	C04LivStk	C05OthAg	C06Fishry	C07Energy	C08OthMi	C09ProcFd	C10MatMf	C11Chemc	C12TechM
		17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1	A01Rice	0	0	0	0	59441	0	0	0	0	0	0	0	0	0	0	0
2	A02Coffee	0	0	0	0	0	5188	0	0	0	0	0	0	0	0	0	0
3	A03OthCrp	0	0	0	0	0	0	32707	0	0	0	0	0	0	0	0	0
4	A04LivStk	0	0	0	0	0	0	0	25634	0	0	0	0	0	0	0	0
5	A05OthAg	0	0	0	0	0	0	0	0	10676	0	0	0	0	0	0	0
6	A06Fishry	0	0	0	0	0	0	0	0	0	20913	0	0	0	0	0	0
7	A07Energy	0	0	0	0	0	0	0	0	0	0	31427	0	0	0	0	0
8	A08OthMin	0	0	0	0	0	0	0	0	0	0	0	12933	0	0	0	0
9	A09ProcFd	0	0	0	0	0	0	0	0	0	0	0	0	92830	0	0	0
10	A10MatMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	38403	0	0
11	A11Chemcl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15887	0
12	A12TechMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7351
13	A13MachMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	A14TxtAprl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	A15OthInd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	A16ElGsWat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	A17Construct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	A18TradeTrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	A19PrivSrv	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	A20PubServ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	C01Rice	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	C02Coffee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	C03OthCrp	43	100	948	14	0	0	0	0	0	0	0	0	0	0	0	0
24	C04LivStk	92	596	396	45	0	0	0	0	0	0	0	0	0	0	0	0
25	C05OthAg	137	4	3	6	0	0	0	0	0	0	0	0	0	0	0	0
26	C06Fishry	0	0	191	0	0	0	0	0	0	0	0	0	0	0	0	0
27	C07Energy	168	140	81	31	0	0	0	0	0	0	0	0	0	0	0	0
28	C08OthMin	6960	219	239	101	0	0	0	0	0	0	0	0	0	0	0	0
29	C09ProcFd	917	1859	2515	541	0	0	0	0	0	0	0	0	0	0	0	0
30	C10MatMfg	18481	1198	1262	3444	0	0	0	0	0	0	0	0	0	0	0	0
31	C11Chemcl	2142	1389	2146	1270	0	0	0	0	0	0	0	0	0	0	0	0
32	C12TechMfg	1859	326	1229	380	0	0	0	0	0	0	0	0	0	0	0	0
33	C13MachMfg	2693	4877	5112	441	0	0	0	0	0	0	0	0	0	0	0	0
34	C14TxtAprl	1142	1082	454	303	0	0	0	0	0	0	0	0	0	0	0	0
35	C15OthInd	414	658	991	3649	0	0	0	0	0	0	0	0	0	0	0	0

		A17Constr	A18TradeT	A19PrivSr	A20PubSe	C01Rice	C02Coffee	C03OthCr	C04LivStk	C05OthAg	C06Fishry	C07Energy	C08OthMi	C09ProcFd	C10MatMf	C11Chemc	C12TechM
		17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
36	C16ElGsWat	141	298	5080	853	0	0	0	0	0	0	0	0	0	0	0	0
37	C17Construct	966	648	288	1113	0	0	0	0	0	0	0	0	0	0	0	0
38	C18TradeTrans	3136	8017	2059	1431	0	0	0	0	0	0	0	0	0	0	0	0
39	C19PrivSrv	2478	6952	8176	3501	0	0	0	0	0	0	0	0	0	0	0	0
40	C20PubServ	434	595	640	2684	0	0	0	0	0	0	0	0	0	0	0	0
41	L01UrbUnSkld	27757	9755	10309	14986	0	0	0	0	0	0	0	0	0	0	0	0
42	L02UrbMidSkld	2450	4226	2607	3898	0	0	0	0	0	0	0	0	0	0	0	0
43	L03UrbHiSkld	526	1206	974	963	0	0	0	0	0	0	0	0	0	0	0	0
44	L04RurUnSkld	728	17024	8968	6598	0	0	0	0	0	0	0	0	0	0	0	0
45	L05RurMidSkld	285	3806	2564	2345	0	0	0	0	0	0	0	0	0	0	0	0
46	L06RurHiSkld	196	1284	528	729	0	0	0	0	0	0	0	0	0	0	0	0
47	Capital	2893	22699	24371	2132	0	0	0	0	0	0	0	0	0	0	0	0
48	H01RurFarmer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	H02RurSelfEmp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	H03RurWage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	H04UrbSelfEmp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	H05UrbWage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	E01StateEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	E02PrivDomEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	E03PrivForEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	VAT	936	3019	2409	1464	133	24	73	4	119	95	558	46	654	431	106	43
57	Mduty	0	0	0	0	5	1	158	4	2	11	111	4	1568	661	1433	1465
58	Xduty	0	0	0	0	94	109	84	0	0	98	258	6	26	314	0	0
59	State	468	1510	1204	732	0	0	0	0	0	0	1000	0	0	0	0	0
60	CapAcc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61	ASEAN	0	0	0	0	0	332	645	0	157	0	0	17	5462	3307	11166	8917
62	OthEAsia	0	0	0	0	0	2208	1580	0	18	0	0	14	1812	4019	15423	12705
63	Americas	0	0	0	0	0	0	476	0	21	0	0	1	223	534	1999	656
64	EU	0	0	0	0	0	63	748	0	30	0	0	2	583	713	4923	4040
65	ROW	0	0	0	0	0	34	1149	0	20	0	0	3	1228	435	2412	1655
	Total	78444	93488	85746	53657	59673	7958	37622	25643	11043	21117	33354	13025	104387	48816	53349	36833

Table 2.1:

		C13MachM	C14TxtApr	C15OthInd	C16ElGsW	C17Constr	C18TradeT	C19PrivSr	C20PubSer	L01UrbUn	L02UrbMi	L03UrbHi	L04RurUn	L05RurMi	L06RurHi	Capital	H01RurFa
		33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
1	A01Rice	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	A02Coffee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	A03OthCrp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	A04LivStk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	A05OthAg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	A06Fishry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	A07Energy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	A08OthMin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	A09ProcFd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	A10MatMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	A11Chemcl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	A12TechMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	A13MachMfg	15195	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	A14TxtAprl	0	31910	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	A15OthInd	0	0	17846	0	0	0	0	0	0	0	0	0	0	0	0	0
16	A16ElGsWat	0	0	0	16674	0	0	0	0	0	0	0	0	0	0	0	0
17	A17Construct	0	0	0	0	78444	0	0	0	0	0	0	0	0	0	0	0
18	A18TradeTrans	0	0	0	0	0	93488	0	0	0	0	0	0	0	0	0	0
19	A19PrivSrv	0	0	0	0	0	0	85746	0	0	0	0	0	0	0	0	0
20	A20PubServ	0	0	0	0	0	0	0	53657	0	0	0	0	0	0	0	0
21	C01Rice	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4545
22	C02Coffee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	C03OthCrp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	916
24	C04LivStk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15633
25	C05OthAg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1090
26	C06Fishry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6620
27	C07Energy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1074
28	C08OthMin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	C09ProcFd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67951
30	C10MatMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3450
31	C11Chemcl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4897
32	C12TechMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7808
33	C13MachMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5869
34	C14TxtAprl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10968
35	C15OthInd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3520

		C13MachN	C14TxtApp	C15OthInd	C16ElGsW	C17Constr	C18TradeT	C19PrivSr	C20PubSer	L01UrbUn	L02UrbMi	L03UrbHi	L04RurUn	L05RurMi	L06RurHi	Capital	H01RurFa
		33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
36	C16ElGsWat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1772
37	C17Construct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	C18TradeTrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8197
39	C19PrivSrv	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25204
40	C20PubServ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20465
41	L01UrbUnSkld	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	L02UrbMidSkld	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	L03UrbHiSkld	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	L04RurUnSkld	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	L05RurMidSkld	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	L06RurHiSkld	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	H01RurFarmer	0	0	0	0	0	0	0	0	70942	15936	0	60063	10813	0	0	0
49	H02RurSelfEmp	0	0	0	0	0	0	0	0	8805	1320	44	4631	985	40	0	0
50	H03RurWage	0	0	0	0	0	0	0	0	9161	0	54	5902	1188	47	0	0
51	H04UrbSelfEmp	0	0	0	0	0	0	0	0	9000	5858	4310	6817	3877	3173	0	0
52	H05UrbWage	0	0	0	0	0	0	0	0	6806	4430	2713	5156	2759	1974	0	0
53	E01StateEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50127	0
54	E02PrivDomEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26194	0
55	E03PrivForEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17118	0
56	VAT	46	130	115	92	237	852	682	58	0	0	0	0	0	0	0	0
57	Mduty	3178	3095	1602	1	0	0	0	0	0	0	0	0	0	0	0	0
58	Xduty	0	211	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	State	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12730	1240
60	CapAcc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5686
61	ASEAN	15117	2016	7077	143	0	1897	2915	176	0	0	0	0	0	0	0	0
62	OthEAsia	26327	22231	11722	1	0	3525	5417	328	0	0	0	0	0	0	0	0
63	Americas	1399	274	2126	0	0	243	373	23	0	0	0	0	0	0	0	0
64	EU	6692	942	1910	0	0	711	1093	66	0	0	0	0	0	0	0	0
65	ROW	4547	193	921	0	0	426	655	40	0	0	0	0	0	0	0	0
	Total	72500	61002	43319	16911	78681	101141	96880	54347	104714	27543	7122	82569	19621	5234	106169	196905

Table 2.1:

		H02RurSel	H03RurWa	H04UrbSel	H05UrbWa	E01StateEn	E02PrivDo	E03PrivFo	VAT	Mduty	Xduty	State	CapAcc	ASEAN	OthEAsia	Americas	EU
		49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
1	A01Rice	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	A02Coffee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	A03OthCrp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	A04LivStk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	A05OthAg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	A06Fishry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	A07Energy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	A08OthMin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	A09ProcFd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	A10MatMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	A11Chemcl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	A12TechMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	A13MachMfg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	A14TxtAprl	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	A15OthInd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	A16ElGsWat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	A17Construct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	A18TradeTrans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	A19PrivSrv	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	A20PubServ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	C01Rice	148	152	285	212	0	0	0	0	0	0	0	1039	0	0	0	0
22	C02Coffee	0	0	0	0	0	0	0	0	0	0	0	0	475	607	1520	4112
23	C03OthCrp	957	987	49	8207	0	0	0	0	0	0	0	145	1599	2442	987	1338
24	C04LivStk	991	1022	1977	1449	0	0	0	0	0	0	0	828	35	511	207	48
25	C05OthAg	66	67	121	92	0	0	0	0	0	0	0	20	10	642	1	4
26	C06Fishry	439	453	858	635	0	0	0	0	0	0	0	22	241	2303	620	636
27	C07Energy	26	26	66	44	0	0	0	0	0	0	0	553	7902	8984	1731	680
28	C08OthMin	0	0	0	0	0	0	0	0	0	0	0	8	317	1223	1	34
29	C09ProcFd	3437	3878	2925	2143	0	0	0	0	0	0	0	1523	903	4564	2011	955
30	C10MatMfg	349	358	681	506	0	0	0	0	0	0	0	1238	154	2283	163	1748
31	C11Chemcl	400	410	765	645	0	0	0	0	0	0	0	1469	1473	1905	400	1138
32	C12TechMfg	1003	1034	1985	1454	0	0	0	0	0	0	0	7622	2296	2151	289	2094
33	C13MachMfg	637	750	1301	500	0	0	0	0	0	0	0	14441	4553	7851	893	2571
34	C14TxtAprl	457	471	1011	711	0	0	0	0	0	0	0	1323	2344	14160	1614	10601
35	C15OthInd	437	449	839	1180	0	0	0	0	0	0	0	1521	313	2560	1649	11079

		H02RurSel	H03RurWa	H04UrbSel	H05UrbWa	E01StateEn	E02PrivDo	E03PrivFo	VAT	Mduty	Xduty	State	CapAcc	ASEAN	OthEAsia	Americas	EU
		49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
36	C16ElGsWat	152	155	294	218	0	0	0	0	0	0	0	0	22	42	13	48
37	C17Construct	0	0	0	0	0	0	0	0	0	0	0	74502	0	0	0	0
38	C18TradeTrans	1517	1081	2062	1522	0	0	0	0	0	0	0	4248	6179	11858	3600	13495
39	C19PrivSrv	3316	3460	14997	2482	0	0	0	0	0	0	5415	0	2051	3937	1195	4480
40	C20PubServ	1523	1634	1165	588	0	0	0	0	0	0	20083	0	576	1105	335	1257
41	L01UrbUnSkld	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	L02UrbMidSkld	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	L03UrbHiSkld	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	L04RurUnSkld	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	L05RurMidSkld	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	L06RurHiSkld	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	H01RurFarmer	0	0	0	0	13340	7835	0	0	0	0	17976	0	0	0	0	0
49	H02RurSelfEmp	0	0	0	0	1239	727	0	0	0	0	1669	0	0	0	0	0
50	H03RurWage	0	0	0	0	1280	752	0	0	0	0	1725	0	0	0	0	0
51	H04UrbSelfEmp	0	0	0	0	2611	1533	0	0	0	0	3518	0	0	0	0	0
52	H05UrbWage	0	0	0	0	1975	1160	0	0	0	0	2661	0	0	0	0	0
53	E01StateEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	E02PrivDomEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	E03PrivForEnt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	VAT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57	Mduty	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
58	Xduty	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
59	State	115	119	243	184	7730	4581	5090	23700	13300	1200	0	0	0	0	0	0
60	CapAcc	3864	3992	10653	8057	21953	10590	15183	0	0	0	29183	0	0	0	0	0
61	ASEAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
62	OthEAsia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	Americas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	EU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	19835	20496	42279	30828	50127	27177	20273	23700	13300	1200	82230	110503	31442	69129	17229	56317

Table 2.1:

		ROW 65	Total
1	A01Rice	0	59441
2	A02Coffee	0	5188
3	A03OthCrp	0	32707
4	A04LivStk	0	25634
5	A05OthAg	0	10676
6	A06Fishry	0	20913
7	A07Energy	0	31427
8	A08OthMin	0	12933
9	A09ProcFd	0	92830
10	A10MatMfg	0	38403
11	A11Chemcl	0	15887
12	A12TechMfg	0	7351
13	A13MachMfg	0	15195
14	A14TxtAprl	0	31910
15	A15OthInd	0	17847
16	A16ElGsWat	0	16674
17	A17Construct	0	78444
18	A18TradeTrans	0	93488
19	A19PrivSrv	0	85746
20	A20PubServ	0	53657
21	C01Rice	0	59673
22	C02Coffee	964	7958
23	C03OthCrp	730	37622
24	C04LivStk	164	25643
25	C05OthAg	5	11043
26	C06Fishry	169	21117
27	C07Energy	9817	33354
28	C08OthMin	481	13025
29	C09ProcFd	814	104387
30	C10MatMfg	423	48816
31	C11Chemcl	624	53349
32	C12TechMfg	267	36833
33	C13MachMfg	746	72500
34	C14TxtAprl	1928	61002
35	C15OthInd	999	43319

		ROW	
		65	Total
36	C16ElGsWat	19	16911
37	C17Construct	0	78681
38	C18TradeTrans	5310	101141
39	C19PrivSrv	1763	96880
40	C20PubServ	495	54347
41	L01UrbUnSkld	0	104714
42	L02UrbMidSkld	0	27543
43	L03UrbHiSkld	0	7122
44	L04RurUnSkld	0	82569
45	L05RurMidSkld	0	19621
46	L06RurHiSkld	0	5234
47	Capital	0	106169
48	H01RurFarmer	0	196905
49	H02RurSelfEmp	375	19835
50	H03RurWage	387	20496
51	H04UrbSelfEmp	1581	42279
52	H05UrbWage	1195	30828
53	E01StateEnt	0	50127
54	E02PrivDomEnt	984	27177
55	E03PrivForEnt	3154	20273
56	VAT	0	23700
57	Mduty	0	13300
58	Xduty	0	1200
59	State	2400	82230
60	CapAcc	1342	110503
61	ASEAN	-27901	31442
62	OthEAsia	-38200	69129
63	Americas	8881	17229
64	EU	33801	56317
65	ROW	12001	25717
	Total	25717	

In their seminal papers, Stone (1981) and Pyatt-Round (1979) show that the multiplier matrix *M* can be decomposed into three economically meaningful additive (or multiplicative) components. Firstly, a transfers matrix that picks up the net multiplier effects induced on a given set of accounts by exogenous transfers accruing to the given set; secondly, an open-loop matrix that captures the cross-effects between different groups; and thirdly a closed-loop matrix detailing the multiplier effects of an exogenous inflow on an endogenous group after it has traveled through the rest of endogenous accounts and returned to the original recipient. To see how this works in practice, note that the Vietnam SAM can be partitioned as follows

$$S = \begin{bmatrix} S_{nn} & S_{nf} & S_{nd} & S_{nx} \\ S_{fn} & S_{ff} & S_{fd} & S_{fx} \\ S_{dn} & S_{df} & S_{dd} & S_{dx} \\ S_{xn} & S_{xf} & S_{xd} & S_{xx} \end{bmatrix} \tag{2.1}$$

where the subscripts denote n activities (20), f factors (4), d other endogenous domestic institutions (2 households and 3 enterprises), and x exogenous domestic and external institutions (4 government, 1 capital account, and ROW).

To evaluate economywide multiplier effects and domestic linkages, first consider the expenditure shares

$$A = \begin{bmatrix} A_{nn} & A_{nf} & A_{nd} & A_{nx} \\ A_{fn} & A_{ff} & A_{fd} & A_{fx} \\ A_{dn} & A_{df} & A_{dd} & A_{dx} \\ A_{xn} & A_{xf} & A_{xd} & A_{xx} \end{bmatrix} \tag{2.2}$$

and define the additive decomposition

$$A_{-x} = B + C \tag{2.3}$$

where A_{-x} denotes the submatrix of A with only domestic institutions (n, f, and d) and

$$B = \begin{bmatrix} A_{nn} & 0 & 0 \\ 0 & A_{ff} & 0 \\ 0 & 0 & A_{dd} \end{bmatrix} \tag{2.4}$$

$$C = \begin{bmatrix} 0 & A_{nf} & A_{nd} \\ A_{fn} & 0 & A_{fd} \\ A_{dn} & A_{df} & 0 \end{bmatrix} \tag{2.5}$$

From standard accounting identities one then obtains

$$\begin{aligned} y &= A_{-x}\, y + x \\ &= By + Cy + x \\ &= (I - B)^{-1}Cy + (I - B)^{-1}x \\ &= [I - (I - B)^{-1}C]^{-1}(I - B)^{-1}x \\ &= (I - D)^{-1}(I - B)^{-1}x \\ &= (I - D^2)^{-1}(I + D)(I - B)^{-1}x \\ &= M_3M_2M_1x \\ &= Mx \end{aligned} \tag{2.6}$$

where $D = (I - B)^{-1}C$, and

$$M_1 = (I - B)^{-1} = \begin{bmatrix} (I - A_{nn})^{-1} & 0 & 0 \\ 0 & (I - A_{ff})^{-1} & 0 \\ 0 & 0 & (I - A_{dd})^{-1} \end{bmatrix} \tag{2.7}$$

is a matrix of domestic economywide multiplier effects. These are the standard multipliers from domestic production-factor-consumption linkages and could be further decomposed with methods proposed by Stone (1981), Pyatt and Round (1979) or Round (1979). The activity block in the upper left corner corresponds to the familiar Leontief inverse.

The second factor matrix M_2 details the socalled direct or open loop linkages between domestic institutions, i.e.,[3]

[3] Note that $D = (I - B)^{-1}C = M_1C$, defined in respectively eq. (2.5) and (2.7). It follows that the diagonal elements of D are equal to zero.

$$M_2 = (I + D) = \begin{bmatrix} I & 0 & 0 \\ 0 & I & 0 \\ 0 & 0 & I \end{bmatrix} + \begin{bmatrix} 0 & D_{nf} & D_{nd} \\ D_{fn} & 0 & D_{fd} \\ D_{dn} & D_{df} & 0 \end{bmatrix} = \begin{bmatrix} I & D_{nf} & D_{nd} \\ D_{fn} & I & D_{fd} \\ D_{dn} & D_{df} & I \end{bmatrix} \quad (2.8)$$

where, e.g. $D_{nd} = (I - A_{nn})^{-1} A_{nd}$ defines cumulative unrequited outflows from n production activities to d households, taking account of the combined effects of cumulative domestic intermediate linkages (the Leontief inverse) and domestic final demand expenditure shares (A_{nd}).

Finally, closed loop effects are detailed in the third factor matrix

$$M_3 = (I - D^2)^{-1} = \begin{bmatrix} E_{nn} & E_{nf} & E_{nd} \\ E_{hn} & E_{ff} & E_{fd} \\ E_{dn} & E_{df} & E_{dd} \end{bmatrix}^{-1}$$

$$= \begin{bmatrix} I - D_{nf}D_{fn} - D_{nd}D_{dn} & D_{nd}D_{df} & D_{nf}D_{fd} \\ D_{nd}D_{df} & I - D_{fn}D_{nf} - D_{fd}D_{df} & D_{hn}D_{nd} \\ D_{dn}D_{nf} & D_{dn}D_{nd} & I - D_{dn}D_{nd} - D_{df}D_{fd} \end{bmatrix}^{-1} \quad (2.9)$$

This last factor matrix represents the income effects originating in one (column) institution, passing through trade linkages, and returning to the recipient row institution. The E_{ij} multipliers aggregate all the indirect income gains accruing between i and j from the existing pattern of domestic economic linkages.

The M_i matrices enter the decomposition multiplicatively and the contribution of each to economywide income generation is difficult to interpret directly. It is more transparent to use the additive component matrices

$$N_1 = M_1 \quad (2.10)$$

$$N_2 = (M_2 - I)M_1 \quad (2.11)$$

$$N_3 = (M_3 - I)M_2M_1 \quad (2.12)$$

which together satisfy M = N1 + N2 + N3.

The total multiplier effects in matrix M are reproduced in Table 2.2 below. From the point of view of dualism, the most relevant feature of this table is the way in which cumulative income effects accrue to rural and urban households. As one would expect, Rural households are the primary beneficiaries of external transfers to agricultural activities (the first 10 sectors). What is perhaps more surprising is the fact that rural and urban households in the aggregate benefit about equally from demand for non-agricultural activities. As we shall see later, there is also significant parity in terms of relative income effects. In particular, linkages from rural households to nonfarm activities still appear to be substantial in Vietnam, and this bodes well for more balanced development in the country.

In the next section, we break down these cumulative effects over detailed income-expenditure channels, but for the moment consider the three-fold decomposition proposed above. Table 2.3 presents the Own and Open-loop Effects as a percent of Total Effects (Table 2.2), displayed together since the matrices N1 and N2 have no nonzero elements in common. As expected, diagonal entries are dominated by own effects (particularly the unitary initial injection in each diagonal element). In the 20x20 activitiy submatrix, the Leontief inverse appears to capture the majority of total multiplier effects in many cases, but there are notable exceptions.

In agricultural sectors particularly, direct intermediate links to other activities are weak. Demand for Rice, for example, only confers a tiny percent of its multiplier effects on sectors 3-7, 10, 12, and 19-20 via interindustry, own, or Leontief linkages. The majority of income generation in all these cases occurs via more extended closed loop links around the activity-factor-household cycle. Compare the total effects of Rice demand on sectors 18 (Trade and Transport) and 19 (Private Services). Although 32 percent of the former effect and only 6 percent of the latter comes directly from interindusty linkages, the cumulative effects are equal (.17). This pattern repeats itself for most agricultural activities, and indicates the indirect nature of the Rural sector's linkages to the rest of the economy.

Turning to the results of Table 2.4, we see the decomposition of direct and indirect effects from the opposite perspective, closed loop effects expressed as a percentage of total multiplier effects. In the case of interindustry linkages, it is noteworthy that closed

loop effects account for the majority of total effects in 310 (or 78 percent) of the 400 interindustry entries. This fact has added significance because closed loop effects would be omitted from traditional input-output multipliers, and this would cause serious downward bias in important final goods sectors such as food and services. It also makes clear the potential of market intermediatation to propagate income growth from an individual sector across the economy.

From a household and rural-urban perspective, closed loop effects exhibit interesting composition. As expected, Urban Households receive most of their benefits indirectly from stimulous to the agricultural activities, while Rural Households mostly benefit directly (i.e. closed loop effects < 50 percent of total effects). Now contrast this intuitive result with the closed loop shares for Rural households arising from nonagricultural activities. In no case are they over 50 percent, implying a greater degree of economic diversification among rural households in Vietnam than might have been expected. Apparently, more than half the induced rural income effects from stimulating nonagricultural activities arises from direct and open loop effects. These are quite direct income-expenditure channels. In all likelihood they rely on farmer's access to local and regional markets, and thus rural livelihoods can benefit from more broadly based economic reform measures.

The last table in this stage of decomposition analysis examines total effects in a relative income context. While the nominal multiplier effects of Table 2.2 are of interest in themselves, it is difficult to ascertain their significance for relative incomes across the economy. In Table 2.5, we present the same cumulative multiplier effects, normalized by the respective incomes of each recipient (row) institution. In practical terms, these numbers can be interpreted as elasticities, measuring percent income change for the recipient (row) institution for a unit (actually 100 billion Vietnam Dong, or about USD5 million). Here one can more easily see the relative incidence of external injections to the economy.

While many detailed results in this table reward close inspection, we focus the present discussion on rural and urban households, and again the results are surprising and encouraging. Comparing rows 25 and 26, we see that rural households most often benefit more, in percent of income terms, than urban households from external stimulous to

sectoral activities (exceptions are sectors 6, 7, 14, 18, 19). This is less surprising when one acknowledges that rural incomes are generally dramatically lower. It is also what one would certainly expect for agricultural activities (except marketed livestock, which is concentrated on the urban periphery), where rural labor, capital, and land predominate. What is more surprising is the fact that relative income gains for rural households exceed those for their urban counterparts in seven of 10 nonagricultural activities and are equal in one sector. This fact implies that economic growth across the economy will be progressive in terms of reducing inequality in income distribution between rural and urban households. Surely this is a desirable result, but it is even more significant in that it suggests there are possibilities for broadly based equitable growth initiatives, including economic reform and trade liberalization. Unlike many developing countries then, it appears that rural households in the rural sector are sufficiently diversified in terms of indirect links to the rest of the economy to resist immiserization during the overall growth process. More rapid market reform and development can be seen in this context as a kind of social insurance for the rural sector. In the next section, we shall see exactly what are the channels that deliver these indirect benefits to households.

Table 2.2: Total Multipliers: N1+N1+N3

		Rice	Rubber	Coffee	SugarCa	OthCrop	Pigs	OLvStk	AgSrv	Forest	Fish	EngMn	PrFd	Mfg	TxtAppr	OthInd	ElcGs	Const	TrdTrn	PrvSrv	PubSrv	LRur	LUrb	Capital	Land	Hrur	Hurb	Entr
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	***Rice***	1.19	.08	.10	.15	.14	.24	.28	.10	.16	.15	.09	.53	.07	.07	.09	.05	.07	.10	.10	.13	.22	.16	.01	.18	.22	.16	.01
2	***Rubber***	.00	1.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	***Coffee***	.00	.00	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	***SugarCane***	.01	.00	.01	1.03	.01	.01	.01	.01	.01	.01	.01	.03	.00	.00	.01	.00	.00	.01	.01	.01	.01	.01	.00	.01	.01	.01	.00
5	***OthCrops***	.06	.04	.05	.07	1.11	.14	.11	.05	.08	.07	.04	.08	.03	.05	.08	.03	.03	.05	.05	.06	.10	.07	.00	.09	.10	.07	.00
6	***Pigs***	.05	.03	.04	.05	.05	1.04	.05	.04	.06	.05	.03	.05	.02	.02	.03	.02	.03	.04	.03	.05	.08	.06	.00	.07	.08	.06	.00
7	***OthLiveStk***	.03	.02	.02	.03	.03	.03	1.03	.02	.03	.03	.02	.04	.01	.01	.02	.01	.02	.03	.02	.03	.04	.04	.00	.04	.04	.04	.00
8	***AgServ***	.07	.01	.02	.02	.02	.02	.02	1.01	.01	.01	.01	.03	.00	.00	.01	.00	.00	.01	.01	.01	.01	.01	.00	.01	.01	.01	.00
9	***Forestry***	.02	.01	.02	.02	.02	.05	.02	.02	1.12	.02	.01	.02	.07	.01	.02	.01	.02	.01	.01	.02	.02	.02	.00	.02	.02	.02	.00
10	***Fishery***	.05	.03	.04	.06	.05	.05	.06	.04	.06	1.20	.03	.10	.03	.03	.03	.02	.03	.04	.04	.05	.08	.06	.00	.07	.08	.06	.00
11	***EnrgMin***	.02	.01	.02	.02	.02	.02	.02	.03	.02	.01	1.05	.02	.08	.01	.02	.02	.11	.01	.02	.02	.02	.01	.00	.02	.02	.01	.00
12	***ProdFd***	.25	.16	.20	.29	.28	.23	.27	.20	.31	.28	.17	1.28	.13	.13	.18	.10	.14	.20	.21	.25	.41	.32	.02	.36	.41	.32	.02
13	***Mfg***	.21	.16	.22	.18	.18	.16	.16	.22	.17	.16	.14	.18	1.28	.15	.23	.16	.29	.15	.16	.18	.18	.18	.01	.17	.18	.18	.01
14	***TxtApprl***	.04	.02	.03	.04	.04	.04	.04	.03	.05	.04	.03	.03	.03	1.34	.05	.02	.02	.03	.03	.04	.06	.04	.00	.05	.06	.04	.00
15	***OthInd***	.04	.03	.04	.05	.04	.17	.08	.05	.05	.09	.04	.04	.03	.04	1.09	.03	.03	.04	.05	.08	.06	.05	.00	.06	.06	.05	.00
16	***ElecGsWat***	.05	.05	.04	.04	.04	.04	.04	.17	.04	.04	.05	.05	.07	.07	.04	1.12	.04	.04	.06	.07	.04	.05	.00	.05	.04	.05	.00
17	***Construct***	.01	.01	.00	.01	.01	.01	.01	.05	.01	.01	.01	.01	.01	.01	.01	.01	1.01	.01	.01	.01	.01	.01	.00	.01	.01	.01	.00
18	***TradeTrans***	.17	.11	.13	.16	.16	.19	.18	.16	.18	.18	.13	.24	.16	.13	.15	.08	.18	1.18	.13	.16	.19	.16	.01	.17	.19	.16	.01
19	***PrivServ***	.17	.12	.14	.19	.18	.16	.18	.14	.19	.21	.18	.16	.12	.12	.12	.08	.14	.20	1.23	.22	.23	.24	.01	.23	.23	.24	.01
20	***PubServ***	.10	.06	.08	.11	.11	.09	.10	.07	.11	.10	.06	.09	.05	.05	.06	.04	.05	.08	.09	1.15	.15	.14	.01	.14	.15	.14	.01
21	***LabRural***	.51	.27	.38	.61	.58	.46	.58	.47	.95	.85	.41	.49	.31	.28	.36	.22	.34	.42	.37	.62	1.36	.30	.02	.33	.36	.30	.02
22	***LabUrban***	.38	.19	.26	.45	.44	.44	.52	.24	.23	.22	.24	.34	.21	.26	.24	.18	.21	.37	.35	.41	.26	1.22	.01	.24	.26	.22	.01
23	***Capital***	.19	.41	.27	.18	.19	.20	.20	.29	.22	.25	.42	.27	.26	.21	.25	.50	.23	.36	.36	.22	.20	.18	1.01	.19	.20	.18	.01
24	***Land***	.20	.23	.22	.22	.20	.08	.09	.03	.10	.04	.02	.11	.02	.02	.03	.01	.02	.03	.03	.03	.06	.04	.00	1.05	.06	.04	.00
25	***HHRural***	.62	.40	.50	.73	.68	.51	.63	.49	1.01	.88	.43	.55	.33	.29	.38	.24	.35	.45	.39	.64	1.39	.32	.05	.85	1.39	.32	.05
26	***HHUrban***	.48	.31	.37	.56	.54	.48	.57	.26	.29	.25	.26	.40	.23	.27	.26	.20	.23	.39	.37	.43	.29	1.25	.03	.75	.29	1.25	.03
27	***Enterprises***	.19	.41	.27	.18	.19	.20	.20	.29	.22	.25	.42	.27	.26	.21	.25	.50	.23	.36	.36	.22	.20	.18	1.01	.19	.20	.18	1.01
	Total	5.11	4.27	4.46	5.45	5.31	5.05	5.45	4.47	5.69	5.41	4.29	5.42	3.82	3.78	3.99	3.67	3.85	4.60	4.48	5.11	5.67	5.10	2.22	5.33	4.67	4.10	1.22

Table 2.3: Own and Open Loop Share of Total Effects ((N1+N2)/M)

(percentages)

	Rice	Rubber	Coffee	SugarCa	OthCrop	Pigs	OLvStk	AgSrv	Forest	Fish	EngMn	PrFd	Mfg	TxtAppr	OthInd	ElcGs	Const	TrdTrn	PrvSrv	PubSrv	LRur	LUrb	Capital	Land	Hrur	Hurb	Entr
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*
1 Rice	89	1	1	0	0	54	51	12	0	2	4	79	3	3	19	1	3	6	15	3	63	58	61	61	63	58	61
2 Rubber	42	100	55	22	42	45	24	62	17	30	44	40	95	58	87	69	77	37	48	38	59	65	61	62	59	65	61
3 Coffee	1	1	100	0	0	3	1	14	0	2	5	83	3	3	17	2	3	7	17	3	62	60	61	61	62	60	61
4 SugarCane	1	1	1	99	1	2	1	11	0	2	4	79	3	2	13	1	3	5	14	2	63	58	61	61	63	58	61
5 OthCrops	1	10	2	1	94	62	41	9	1	4	3	35	8	36	52	4	5	5	19	4	63	57	61	61	63	57	61
6 Pigs	1	0	0	0	0	96	0	18	0	0	0	13	0	2	1	0	0	0	4	0	63	58	61	61	63	58	61
7 OthLiveStk	1	1	1	0	1	3	97	6	1	2	3	32	5	6	5	2	5	22	15	5	60	63	61	61	60	63	61
8 AgServ	88	19	70	47	59	61	55	99	1	2	5	77	4	7	24	11	3	6	15	3	63	58	61	61	63	58	61
9 Forestry	32	32	40	21	20	76	39	44	98	30	37	30	90	41	52	52	65	23	32	21	63	57	61	61	63	57	61
10 Fishery	1	1	1	0	0	21	20	6	0	95	3	58	13	2	7	2	4	4	12	2	63	57	61	61	63	57	61
11 EnrgMin	37	46	48	18	23	56	26	71	14	24	99	39	93	55	74	83	95	37	56	39	60	62	61	61	60	62	61
12 ProdFd	1	1	1	0	0	3	1	14	0	2	5	83	3	3	17	2	3	7	17	3	62	60	61	61	62	60	61
13 Mfg	45	52	58	24	29	32	20	64	19	27	46	42	95	59	71	70	79	39	48	37	58	65	61	62	58	65	61
14 TxtApprl	3	8	7	1	2	13	4	12	1	7	10	7	30	99	60	38	17	13	17	16	64	55	61	61	64	55	61
15 OthInd	8	22	18	3	5	80	49	45	7	53	31	24	43	56	98	48	41	25	44	53	62	60	61	61	62	60	61
16 ElecGsWat	31	56	30	9	16	26	19	88	10	24	60	44	77	75	58	99	63	44	65	54	56	67	61	62	56	67	61
17 Construct	45	77	36	21	19	29	20	94	17	22	69	45	68	66	56	87	100	67	80	73	59	64	61	61	59	64	61
18 TradeTrans	32	32	29	11	16	43	30	49	20	29	43	58	62	55	53	39	65	92	39	27	61	62	61	61	61	62	61
19 PrivServ	6	14	10	3	3	8	5	25	6	28	46	17	34	32	24	16	40	39	91	32	57	66	61	62	57	66	61
20 PubServ	1	3	2	0	0	1	1	10	1	2	5	3	7	6	5	6	7	6	25	92	59	64	61	61	59	64	61
21 LabRural	56	47	54	57	57	57	58	67	71	72	65	60	63	59	63	60	65	60	58	64	73	0	0	0	61	61	61
22 LabUrban	57	44	50	58	59	67	66	53	15	23	57	59	61	68	60	64	59	67	68	61	0	82	0	0	61	62	61
23 Capital	33	80	63	16	27	44	32	70	30	47	81	59	76	68	70	90	71	73	75	45	0	0	99	0	60	63	61
24 Land	83	91	88	82	81	65	59	12	59	11	5	72	21	16	33	4	7	6	16	4	0	0	0	95	63	58	61
25 HHRural	60	61	61	61	60	57	58	65	70	70	64	62	62	58	62	60	63	59	57	63	72	0	61	59	72	0	61
26 HHUrban	62	62	61	62	63	66	65	51	23	22	55	60	59	66	59	63	57	65	66	58	0	80	61	65	0	80	61
27 Enterprises	33	80	63	16	27	44	32	70	30	47	81	59	76	68	70	90	71	73	75	45	0	0	99	0	0	0	99
Average	32	35	35	23	26	41	32	42	19	25	34	49	43	40	45	39	40	33	40	31	51	51	57	53	57	57	63

Table 2.4: Closed Loop as a Share of Total Effects (N3/M)

(percentages)

		Rice	Rubber	Coffee	SugarCa	OthCrop	Pigs	OLvStk	AgSrv	Forest	Fish	EngMn	PrFd	Mfg	TxtAppr	OthInd	ElcGs	Const	TrdTrn	PrvSrv	PubSrv	LRur	LUrb	Capital	Land	Hrur	Hurb	Entr
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	***Rice***	11	99	99	100	100	46	49	88	100	98	96	21	97	97	81	99	97	94	85	97	37	42	39	39	37	42	39
2	***Rubber***	58	0	45	78	58	55	76	38	83	70	56	60	5	42	13	31	23	63	52	62	41	35	39	38	41	35	39
3	***Coffee***	99	99	0	100	100	97	99	86	100	98	95	17	97	97	83	98	97	93	83	97	38	40	39	39	38	40	39
4	***SugarCane***	99	99	99	1	99	98	99	89	100	98	96	21	97	98	87	99	97	95	86	98	37	42	39	39	37	42	39
5	***OthCrops***	99	90	98	99	6	38	59	91	99	96	97	65	92	64	48	96	95	95	81	96	37	43	39	39	37	43	39
6	***Pigs***	99	100	100	100	100	4	100	82	100	100	100	87	100	98	99	100	100	100	96	100	37	42	39	39	37	42	39
7	***OthLiveStk***	99	99	99	100	99	97	3	94	99	98	97	68	95	94	95	98	95	78	85	95	40	37	39	39	40	37	39
8	***AgServ***	12	81	30	53	41	39	45	1	99	98	95	23	96	93	76	89	97	94	85	97	37	42	39	39	37	42	39
9	***Forestry***	68	68	60	79	80	24	61	56	2	70	63	70	10	59	48	48	35	77	68	79	37	43	39	39	37	43	39
10	***Fishery***	99	99	99	100	100	79	80	94	100	5	97	42	87	98	93	98	96	96	88	98	37	43	39	39	37	43	39
11	***EnrgMin***	63	54	52	82	77	44	74	29	86	76	1	61	7	45	26	17	5	63	44	61	40	38	39	39	40	38	39
12	***ProdFd***	99	99	99	100	100	97	99	86	100	98	95	17	97	97	83	98	97	93	83	97	38	40	39	39	38	40	39
13	***Mfg***	55	48	42	76	71	68	80	36	81	73	54	58	5	41	29	30	21	61	52	63	42	35	39	38	42	35	39
14	***TxtApprl***	97	92	93	99	98	87	96	88	99	93	90	93	70	1	40	62	83	87	83	84	36	45	39	39	36	45	39
15	***OthInd***	92	78	82	97	95	20	51	55	93	47	69	76	57	44	2	52	59	75	56	47	38	40	39	39	38	40	39
16	***ElecGsWat***	69	44	70	91	84	74	81	12	90	76	40	56	23	25	42	1	37	56	35	46	44	33	39	38	44	33	39
17	***Construct***	55	23	64	79	81	71	80	6	83	78	31	55	32	34	44	13	0	33	20	27	41	36	39	39	41	36	39
18	***TradeTrans***	68	68	71	89	84	57	70	51	80	71	57	42	38	45	47	61	35	8	61	73	39	38	39	39	39	38	39
19	***PrivServ***	94	86	90	97	97	92	95	75	94	72	54	83	66	68	76	84	60	61	9	68	43	34	39	38	43	34	39
20	***PubServ***	99	97	98	100	100	99	99	90	99	98	95	97	93	94	95	94	93	94	75	8	41	36	39	39	41	36	39
21	***LabRural***	44	53	46	43	43	43	42	33	29	28	35	40	37	41	37	40	35	40	42	36	27	100	100	100	39	39	39
22	***LabUrban***	43	56	50	42	41	33	34	47	85	77	43	41	39	32	40	36	41	33	32	39	100	18	100	100	39	38	39
23	***Capital***	67	20	37	84	73	56	68	30	70	53	19	41	24	32	30	10	29	27	25	55	100	100	1	100	40	37	39
24	***Land***	17	9	12	18	19	35	41	88	41	89	95	28	79	84	67	96	93	94	84	96	100	100	100	5	37	42	39
25	***HHRural***	40	39	39	39	40	43	42	35	30	30	36	38	38	42	38	40	37	41	43	37	28	100	39	41	28	100	39
26	***HHUrban***	38	38	39	38	37	34	35	49	77	78	45	40	41	34	41	37	43	35	34	42	100	20	39	35	100	20	39
27	***Enterprises***	67	20	37	84	73	56	68	30	70	53	19	41	24	32	30	10	29	27	25	55	100	100	1	100	100	100	1
	Average	68	65	65	77	74	59	68	58	81	75	66	51	57	60	55	61	60	67	60	69	49	49	43	47	43	43	37

Table 2.5: Total Effects Normalised by Income

(percent change in income per 100 trillion Vietnam Dong)

		Rice	Rubber	Coffee	SugarCa	OthCrop	Pigs	OLvStk	AgSrv	Forest	Fish	EngMn	PrFd	Mfg	TxtAppr	OthInd	ElcGs	Const	TrdTrn	PrvSrv	PubSrv	LRur	LUrb	Capital	Land	Hrur	Hurb	Entr
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	***Rice***	2.00	.14	.17	.25	.24	.41	.47	.17	.28	.25	.14	.90	.11	.11	.16	.09	.12	.17	.17	.22	.36	.26	.02	.31	.36	.26	.02
2	***Rubber***	.01	53.72	.01	.01	.01	.01	.01	.01	.01	.01	.00	.01	.04	.00	.02	.01	.01	.00	.01	.01	.01	.01	.00	.01	.01	.01	.00
3	***Coffee***	.01	.01	16.60	.01	.01	.01	.01	.01	.01	.01	.01	.04	.00	.00	.01	.00	.00	.01	.01	.01	.01	.01	.00	.01	.01	.01	.00
4	***SugarCane***	.23	.15	.18	31.05	.26	.21	.25	.18	.29	.26	.15	.94	.12	.12	.16	.09	.13	.18	.18	.23	.39	.29	.02	.33	.39	.29	.02
5	***OthCrops***	.19	.14	.15	.23	3.45	.44	.34	.15	.25	.22	.13	.25	.11	.15	.24	.08	.11	.15	.16	.20	.33	.23	.01	.27	.33	.23	.01
6	***Pigs***	.28	.18	.22	.32	.30	6.13	.29	.23	.35	.31	.18	.27	.14	.14	.16	.11	.15	.21	.19	.27	.46	.34	.02	.39	.46	.34	.02
7	***OthLiveStk***	.26	.17	.21	.30	.29	.24	9.71	.19	.31	.27	.17	.33	.14	.14	.16	.10	.14	.25	.21	.26	.40	.36	.02	.38	.40	.36	.02
8	***AgServ***	1.72	.17	.55	.46	.57	.47	.50	25.42	.27	.24	.14	.80	.11	.11	.16	.09	.12	.17	.17	.21	.35	.26	.02	.30	.35	.26	.02
9	***Forestry***	.25	.16	.23	.25	.24	.64	.30	.22	13.82	.27	.17	.21	.87	.15	.21	.14	.26	.17	.17	.21	.29	.21	.01	.25	.29	.21	.01
10	***Fishery***	.21	.13	.16	.24	.23	.23	.27	.15	.26	5.02	.14	.43	.12	.11	.13	.08	.11	.16	.16	.21	.35	.25	.02	.29	.35	.25	.02
11	***EnrgMin***	.03	.02	.03	.03	.03	.04	.03	.05	.03	.03	1.90	.03	.14	.02	.04	.04	.20	.02	.03	.03	.03	.03	.00	.03	.03	.03	.00
12	***ProdFd***	.21	.14	.17	.25	.23	.19	.23	.17	.26	.23	.14	1.08	.11	.11	.15	.08	.12	.17	.17	.21	.35	.27	.02	.30	.35	.27	.02
13	***Mfg***	.22	.16	.23	.19	.19	.16	.17	.23	.17	.17	.14	.18	1.32	.15	.24	.17	.30	.15	.17	.19	.18	.18	.01	.18	.18	.18	.01
14	***TxtApprl***	.09	.06	.07	.10	.10	.09	.09	.07	.11	.11	.06	.08	.06	3.25	.13	.05	.06	.07	.07	.10	.15	.10	.01	.12	.15	.10	.01
15	***OthInd***	.21	.16	.18	.23	.22	.84	.40	.25	.25	.44	.18	.22	.17	.22	5.45	.15	.17	.19	.23	.40	.31	.25	.01	.28	.31	.25	.01
16	***ElecGsWat***	.24	.24	.18	.21	.22	.20	.22	.87	.20	.21	.25	.25	.35	.34	.22	5.87	.23	.22	.33	.35	.23	.26	.01	.24	.23	.26	.01
17	***Construct***	.01	.01	.01	.01	.01	.01	.01	.05	.01	.01	.01	.01	.01	.01	.01	.01	1.17	.01	.02	.02	.01	.01	.00	.01	.01	.01	.00
18	***TradeTrans***	.18	.11	.13	.16	.16	.19	.18	.16	.18	.18	.13	.25	.16	.13	.15	.08	.18	1.19	.14	.16	.19	.16	.01	.17	.19	.16	.01
19	***PrivServ***	.15	.10	.12	.16	.16	.13	.16	.12	.16	.19	.16	.14	.10	.10	.10	.06	.12	.17	1.06	.19	.20	.21	.01	.20	.20	.21	.01
20	***PubServ***	.28	.19	.23	.33	.31	.26	.31	.21	.33	.29	.19	.25	.15	.15	.17	.12	.16	.23	.26	3.38	.43	.40	.02	.41	.43	.40	.02
21	***LabRural***	.35	.18	.26	.42	.39	.31	.39	.32	.65	.58	.28	.34	.21	.19	.24	.15	.23	.29	.25	.42	.93	.20	.01	.22	.25	.20	.01
22	***LabUrban***	.36	.18	.24	.42	.41	.41	.49	.23	.22	.21	.23	.32	.20	.24	.22	.17	.20	.35	.33	.38	.24	1.15	.01	.22	.24	.21	.01
23	***Capital***	.18	.39	.25	.17	.18	.19	.19	.28	.21	.24	.40	.26	.25	.20	.23	.48	.22	.34	.34	.21	.19	.17	.96	.18	.19	.17	.01
24	***Land***	1.15	1.32	1.24	1.27	1.13	.48	.50	.15	.59	.24	.13	.60	.12	.11	.17	.08	.11	.15	.15	.20	.32	.23	.01	5.98	.32	.23	.01
25	***HHRural***	.33	.21	.27	.39	.36	.27	.33	.26	.54	.47	.23	.29	.17	.16	.20	.13	.19	.24	.21	.34	.74	.17	.02	.45	.74	.17	.02
26	***HHUrban***	.32	.21	.25	.37	.36	.32	.38	.17	.19	.17	.17	.27	.15	.18	.17	.13	.15	.26	.25	.29	.19	.83	.02	.50	.19	.83	.02
27	***Enterprises***	.17	.36	.24	.16	.17	.18	.18	.26	.19	.22	.37	.24	.23	.18	.22	.45	.21	.32	.32	.20	.17	.16	.89	.16	.17	.16	.89
	Average	.36	2.19	.84	1.41	.38	.48	.61	1.13	.75	.40	.23	.33	.21	.25	.35	.33	.19	.22	.21	.33	.29	.26	.08	.45	.26	.22	.04

3. Path Decomposition Analysis of Rural-urban Linkages

The previous section shows that block decomposition of the SAM can elucidate the linkages between generic classes of economic agents. Income-expenditure linkages can be computed and decomposed according to three different categories of interdependence, providing us with a detailed view of the extent and magnitude of the forces responsible for income generation as they work their way through the main linkages. To obtain a more comprehensive description of these linkage effects, however, we need to go one step further and identify the specific paths or channels by which expenditures proliferate income effects across the economy. The structural path analysis put forth by Lantner (1974) and Gazon (1979) to study abstract linear systems of equations has been used by several authors to examine input-output systems. Recognizing the applicability of this technique to extended linear models, Defourny and Thorbecke (1984) showed the rich information structure that could be derived by applying this approach in a SAM framework. Following the ideas in the contributions by these authors, we now examine the issue of rural-urban dualism in Vietnam, shedding new light on the complex interactions responsible for determining household incomes.

To summarize the methodology, each pair $<i,j>$ of indices in the SAM accounts is called an arc. A path is a sequence s of indices $s=<i,k,l,...,m,j>$ which can be decomposed into consecutive arcs $<i,k>$, $<k,l>$,...,$<m,j>$. A path with non-repeating indices is termed an elementary path. A circuit of influence is a path s such that the first and last index coincide. The influence of account i on account j through a path s will be represented by $(i \rightarrow j)_s$. To estimate the income effect of account i on account j along $<i,j>$, note from the basic expenditure relationship, before economywide linkages are taken into account, we have:

$$\frac{\partial y_j}{\partial y_i} = a_{ji}$$

Thus any exogenous income increase affecting i gives rise to a direct income increase in j measured by entry (j,i) of the transpose of the column normalized (expenditure share) matrix A. Due to the linear structure of the model, the *direct* income influence along an elementary path $s=<i,k,...,m,j>$ is a composite effect of the direct influences along the constituent arcs, i.e.:

$$D^{P}_{(i\to j)s} = a_{ki}...a_{jm}$$

In any given path *s* there may exist feedback effects among its indices. Account *i* influences *k* but *k* in turn may influence *i*, either directly or through other intermediary indices. Accounts influence themselves through loops as well. All of these feedback effects taking place along circuits in the path work to amplify the magnitude of the direct influence being transmitted over the path. The expanded influence will be called *total* influence, the ratio of total to direct influence being the income path-multiplier:

$$T^{P}_{(i\to j)s} = D^{P}_{(i\to j)s}\mu^{P}_{s}$$

Notice, on the other hand, that more than one elementary path, each one with its respective feedback circuits, may span two indices *i,j*. Therefore the total income influence along a path does not capture the full or global influence in the network of channels linking *i* and *j*. Let $S=\{s/i,j\}$ be the set of all elementary paths joining *i* and *j*. By additivity, the *global* price influence is defined as:

$$G^{P}_{(i\to j)s} = \sum_{s\in S} T^{P}_{(i\to j)s} = \sum_{s\in S} D^{P}_{(i\to j)s}\mu^{P}_{s}$$

The last equality, where μ_{ji} is the (j,i) entry in the multiplier matrix *M*, follows from the fact that *S* includes all connecting paths between accounts *i* and *j*. Direct, total and global influence are three distinct components that make up the transmission mechanism underlying income determination.

Applying these techniques to the year 2000 SAM for Vietnam, we can examine in detail the process by which diverse economic activities affect household incomes. For policy makers, this can elucidate many otherwise unanticipated conseqences of policies targeted elsewhere in the economy. For example, the figures in Table 3.1 below decompose linkages from the Rice sector to both Rural and Urban households.

Table 3.1: Household Path Decomposition – Rice Sector

Path	Global Effect	Direct Effect	Path Effect	Total Effect	% of Global	Cum %
1. Rice, LabRur, HHRur	.619	.230	1.527	.352	56.8	56.8
2. Rice, Land, HHRur		.079	1.535	.121	19.5	76.3
3. Rice, AgServ, LabRur, HHRur		.013	1.529	.020	3.3	79.6
4. Rice, Forest, LabRur, HHRur		.001	1.685	.001	.2	79.8
5. Rice, Mfg, LabRur, HHRur		.006	1.881	.010	1.7	81.5
6. Rice, TrdTrns, LabRur, HHRur		.008	1.704	.013	2.1	83.6
7. Rice, Capital, Entr, HHRur		.001	1.531	.001	.2	83.8
8. Rice, AgServ, ElGsWat, LabRur, HHRur		.001	1.705	.001	.2	83.9
9. Rice, AgServ, TrdTrns, LabRur, HHRur		.001	1.706	.001	.2	84.1
10. Rice, Mfg, Forest, LabRur, HHRur		.002	2.072	.004	.6	84.7
11. Rice, Mfg, EnrgMin, LabRur, HHRur		.001	1.950	.002	.2	85.0
12. Rice, Mfg, TrdTrns, LabRur, HHRur		.001	2.084	.002	.3	85.3
13. Rice, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.002	1.811	.003	.5	85.7
14. Rice, LabUrb, HHUrb, Pig, LabRur, HHRur		.001	1.750	.001	.2	85.9
15. Rice, LabUrb, HHUrb, OtLvstk, LabRur, HHRur		.001	1.750	.002	.3	86.2
16. Rice, LabUrb, HHUrb, Fishery, LabRur, HHRur		.002	1.992	.003	.5	86.8
17. Rice, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.003	1.853	.005	.9	87.6
18. Rice, LabUrb, HHUrb, Mfg, LabRur, HHRur		.001	2.122	.002	.3	87.9
19. Rice, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.002	1.900	.003	.5	88.5
20. Rice, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.003	1.955	.006	1.0	89.5
21. Rice, LabUrb, HHUrb, PubServ, LabRur, HHRur		.005	1.843	.009	1.4	90.9
22. Rice, Land, HHUrb, OthCrop, LabRur, HHRur		.001	1.811	.001	.2	91.1
23. Rice, Land, HHUrb, Fishery, LabRur, HHRur		.001	1.992	.001	.2	91.4
24. Rice, Land, HHUrb, ProcFd, LabRur, HHRur		.001	1.853	.002	.4	91.7
25. Rice, Land, HHUrb, TrdTrns, LabRur, HHRur		.001	1.900	.001	.2	91.9
26. Rice, Land, HHUrb, PrivSrv, LabRur, HHRur		.001	1.955	.003	.4	92.4
27. Rice, Land, HHUrb, PubServ, LabRur, HHRur		.002	1.843	.004	.6	93.0
28. Rice, LabUrb, HHUrb	.484	.180	1.407	.253	52.3	52.3
29. Rice, Land, HHUrb		.076	1.419	.108	22.4	74.7
30. Rice, AgServ, LabUrb, HHUrb		.004	1.409	.005	1.1	75.8
31. Rice, Mfg, LabUrb, HHUrb		.004	1.742	.008	1.6	77.4
32. Rice, TrdTrns, LabUrb, HHUrb		.008	1.580	.012	2.5	79.9
33. Rice, AgServ, ElGsWat, LabUrb, HHUrb		.001	1.570	.001	.2	80.1
34. Rice, AgServ, TrdTrns, LabUrb, HHUrb		.001	1.582	.001	.2	80.3
35. Rice, Mfg, TrdTrns, LabUrb, HHUrb		.001	1.941	.002	.4	80.7
36. Rice, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.003	1.811	.005	1.0	81.7
37. Rice, LabRur, HHRur, OthCrop, Land, HHUrb		.001	1.811	.002	.3	82.0
38. Rice, LabRur, HHRur, Pig, LabUrb, HHUrb		.002	1.750	.004	.8	82.9
39. Rice, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.750	.002	.5	83.4
40. Rice, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.003	1.853	.006	1.2	84.6
41. Rice, LabRur, HHRur, Mfg, LabUrb, HHUrb		.001	2.122	.001	.3	84.9
42. Rice, LabRur, HHRur, TxtAprl, LabUrb, HHUrb		.001	2.301	.001	.3	85.2
43. Rice, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.002	1.900	.005	.9	86.1
44. Rice, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.004	1.955	.008	1.6	87.7
45. Rice, LabRur, HHRur, PubServ, LabUrb, HHUrb		.004	1.843	.007	1.4	89.1
46. Rice, Land, HHRur, OthCrop, LabUrb, HHUrb		.001	1.811	.002	.4	89.4
47. Rice, Land, HHRur, Pig, LabUrb, HHUrb		.001	1.750	.001	.3	89.7
48. Rice, Land, HHRur, ProcFd, LabUrb, HHUrb		.001	1.853	.002	.4	90.1
49. Rice, Land, HHRur, TrdTrns, LabUrb, HHUrb		.001	1.900	.002	.3	90.5
50. Rice, Land, HHRur, PrivSrv, LabUrb, HHUrb		.001	1.955	.003	.5	91.0
51. Rice, Land, HHRur, PubServ, LabUrb, HHUrb		.001	1.843	.002	.5	91.5

In this table, results are shown for paths consisting of not more than five nodes that contribute at least .001 to the overall multiplier effect between Rice and Rural or Urban households, respectively. While this accounts for a significant majority (over 90%) of income effects, there are literally hundreds of longer income-expenditure chains in each bilateral relationship. Note immediately the last column of the table, that displays the cumulative percent of the total bilateral effect. Here we see the dependence of Vietnamese Rural households on the direct factor income from the Rice sector, as passed directly through Rural Labor and Land. Rural Households obtain 76.3% of their income from this source directly, and another 9% (rows 3-12) from Rice's downstream linkages to Rural factor employment in other sectors. Urban households get 74.7% of their benefit directly from Rice (land) factor services and another 6% (rows 30-35) from downstream employment. The main source of indirect linkages in the Rice-Rural Household multiplier chain is effected via returns from Urban Household consumption patterns (rows 13-27), reflecting the pervasive linkages emanating from this staple sector.

Rice affects Urban Households differently. Although there is significant Rice culture within and around urban areas, the total bilateral multiplier here is smaller in absolute (.619 vs. .484) terms. While direct factor income links are comparable between Rural and Urban households, there are somewhat weaker Rural links to downstream sectors like Ag Services, Manufacturing, and Trade and Transport, all of which deliver extra factor income to households in response to higher Rice output. As a percent of total effects, the downstream links of Rural and Urban households are about equal, but structure of the linkages differs in interesting ways and the nominal income effects are significantly larger for Rural Households.

A complete list of activity-household path decompositions is given in the annex to this paper, with far too many details to cover in the present discussion. A few relationships are of special interest, however, and these are reproduced in Tables 3.2 and 3.3 below. The first table shows path decompostitions of links between Manufacturing and Rural and Urban households. Several features are of particular interest here. First, note that indirect linkages represent most of the income effect for Rural households, but this group obtains fully 44.8% of its total benefit from manufacturing expansion in direct Rural labor value added. After this, the main links are ties between Rural labor and sectors downstream from Manufacturing, followed by the consumption linkages emanating from Urban

Households. Secondly, note that the absolute (global) income effect on Rural household incomes is greater than on their Urban counterparts, while the relative income effects (Table 2.5) are nearly equal. Both these effects might be surprising, but they are actually logical manifestations of Vietnam's early stage of economic moderization. Because of the country's emergent status in terms of secondary and tertiary activities, agriculture still dominates not only GDP but is unusually prominent in industry (via Food and other primary processing activities). For this reason, Vietnamese Rural households presently have relatively strong income-expenditure links to industry but, in the absence of policies clearly directed toward regional market and industry development, this relationship may weaken over time.

The circumstances for Urban households are more predictable, with significant direct links (47.1%) and many downstream sources of direct Urban labor (26) value added. What is noteworthy about both Urban and Rural households in the downstream sense, however, is that one-fifth to one-quarter of all income effects arise from chains of more than six institutions. This fact reaffirms the importance of economic policies, like reform, that seek to facilitate commercial interaction in the broadest sense.

Indirect linkages are most pervasive in the tertiary sectors, and as a case in point we show the path decompositions for Private Services in Table 3.3. Again the Rural housholds are surprising in the extent of their direct participation (60.3%). Modern development theory has recognized that services are a more important activity in the rural economy than often assumed, but again the prominence of Rural relative to Urban households here is symptomatic of an emergent economy in its early stages of development. As Vietnam progresses along the path towards a more advanced and dynamic Asian economy, the value added shares of both industry and services (especially the more human-capital intensive ones) will shift inexorably toward Urban areas. If the country wants to avoid excessive migratory pressures or rural-urban inequality, more analysis of this kind is needed to support value added creation rural areas and balanced growth across the economy.

Table 3.2: Household Path Decompositions for Manufacturing

	Path	Global Effect	Direct Effect	Path Effect	Total Effect	% of Global	Cum %
1.	Mfg, LabRur, HHRur	.328	.085	1.721	.147	44.8	44.8
2.	Mfg, Forest, LabRur, HHRur		.028	1.897	.054	16.4	61.2
3.	Mfg, Forest, Land, HHRur		.001	1.921	.003	.8	62.0
4.	Mfg, Fishery, LabRur, HHRur		.001	1.967	.002	.7	62.7
5.	Mfg, EnrgMin, LabRur, HHRur		.012	1.785	.021	6.5	69.2
6.	Mfg, OthInd, LabRur, HHRur		.001	1.849	.002	.8	69.9
7.	Mfg, ElGsWat, LabRur, HHRur		.003	1.910	.006	1.8	71.7
8.	Mfg, TrdTrns, LabRur, HHRur		.014	1.911	.027	8.1	79.9
9.	Mfg, PrivSrv, LabRur, HHRur		.003	1.999	.006	1.7	81.6
10.	Mfg, PubServ, LabRur, HHRur		.001	1.859	.001	.3	81.9
11.	Mfg, Capital, Entr, HHRur		.003	1.725	.005	1.5	83.4
12.	Mfg, EnrgMin, PrivSrv, LabRur, HHRur		.001	2.071	.001	.3	83.8
13.	Mfg, TrdTrns, PrivSrv, LabRur, HHRur		.001	2.204	.001	.4	84.2
14.	Mfg, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.001	2.073	.001	.4	84.6
15.	Mfg, LabUrb, HHUrb, Fishery, LabRur, HHRur		.001	2.279	.001	.5	85.0
16.	Mfg, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.001	2.122	.002	.7	85.7
17.	Mfg, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.001	2.166	.001	.4	86.2
18.	Mfg, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.001	2.233	.003	.9	87.0
19.	Mfg, LabUrb, HHUrb, PubServ, LabRur, HHRur		.002	2.108	.004	1.2	88.2
20.	Mfg, LabUrb, HHUrb	.227	.069	1.548	.107	47.1	47.1
21.	Mfg, Forest, LabUrb, HHUrb		.001	1.719	.002	.7	47.8
22.	Mfg, Forest, Land, HHUrb		.001	1.757	.002	1.0	48.8
23.	Mfg, EnrgMin, LabUrb, HHUrb		.005	1.607	.008	3.7	52.5
24.	Mfg, OthInd, LabUrb, HHUrb		.001	1.672	.001	.6	53.1
25.	Mfg, ElGsWat, LabUrb, HHUrb		.003	1.717	.005	2.2	55.3
26.	Mfg, TrdTrns, LabUrb, HHUrb		.014	1.732	.024	10.6	65.8
27.	Mfg, PrivSrv, LabUrb, HHUrb		.003	1.784	.006	2.7	68.6
28.	Mfg, Capital, Entr, HHUrb		.002	1.554	.003	1.5	70.1
29.	Mfg, EnrgMin, PrivSrv, LabUrb, HHUrb		.001	1.850	.001	.5	70.6
30.	Mfg, TrdTrns, PrivSrv, LabUrb, HHUrb		.001	1.982	.001	.6	71.3
31.	Mfg, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.001	2.073	.002	.9	72.2
32.	Mfg, LabRur, HHRur, Pig, LabUrb, HHUrb		.001	2.003	.002	.7	72.9
33.	Mfg, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	2.003	.001	.5	73.4
34.	Mfg, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.001	2.122	.002	1.1	74.5
35.	Mfg, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.001	2.166	.002	.8	75.3
36.	Mfg, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.001	2.233	.003	1.4	76.8
37.	Mfg, LabRur, HHRur, PubServ, LabUrb, HHUrb		.001	2.108	.003	1.2	78.0

Generally speaking, the income-expenditure chains arising from growth in Private Services are longer because of its more complex interactions with the formal sector. Indeed, after direct employment effects (rows 1 and 30), most of the induced income from services arises from downstream sector expansion (rows 2-21 for Rural households) rather than final demand loops (rows 31-44). Noting the size of the global effects from this sector reminds us yet again how important are policies of general market facilitation.

Table 3.3: Household Path Decompositions for Private Services

Path	Global Effect	Direct Effect	Path Effect	Total Effect	% of Global	Cum %
1. PrivSrv, LabRur, HHRur	.391	.145	1.628	.236	60.3	60.3
2. PrivSrv, OthCrop, LabRur, HHRur		.002	1.715	.003	.8	61.2
3. PrivSrv, OthCrop, Land, HHRur		.001	1.730	.001	.2	61.4
4. PrivSrv, OtLvstk, LabRur, HHRur		.001	1.648	.001	.2	61.6
5. PrivSrv, Fishery, LabRur, HHRur		.001	1.860	.002	.4	62.0
6. PrivSrv, EnrgMin, LabRur, HHRur		.001	1.694	.001	.3	62.3
7. PrivSrv, ProcFd, LabRur, HHRur		.003	1.809	.005	1.2	63.5
8. PrivSrv, Mfg, LabRur, HHRur		.004	1.999	.008	2.0	65.5
9. PrivSrv, OthInd, LabRur, HHRur		.002	1.751	.004	.9	66.5
10. PrivSrv, ElGsWat, LabRur, HHRur		.003	1.813	.005	1.2	67.7
11. PrivSrv, Cnstrct, LabRur, HHRur		.001	1.646	.002	.5	68.2
12. PrivSrv, TrdTrns, LabRur, HHRur		.006	1.807	.012	3.0	71.1
13. PrivSrv, PubServ, LabRur, HHRur		.006	1.753	.011	2.8	73.9
14. PrivSrv, Capital, Entr, HHRur		.006	1.631	.009	2.3	76.2
15. PrivSrv, ProcFd, Rice, LabRur, HHRur		.002	1.929	.005	1.2	77.5
16. PrivSrv, ProcFd, Rice, Land, HHRur		.001	1.936	.002	.4	77.9
17. PrivSrv, ProcFd, Fishery, LabRur, HHRur		.001	2.066	.001	.4	78.3
18. PrivSrv, ProcFd, TrdTrns, LabRur, HHRur		.001	1.992	.001	.3	78.5
19. PrivSrv, Mfg, Forest, LabRur, HHRur		.001	2.202	.003	.7	79.3
20. PrivSrv, Mfg, EnrgMin, LabRur, HHRur		.001	2.071	.001	.3	79.6
21. PrivSrv, Mfg, TrdTrns, LabRur, HHRur		.001	2.204	.001	.4	79.9
22. PrivSrv, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.002	1.910	.003	.8	80.7
23. PrivSrv, LabUrb, HHUrb, Pig, LabRur, HHRur		.001	1.846	.001	.3	81.0
24. PrivSrv, LabUrb, HHUrb, OtLvstk, LabRur, HHRur		.001	1.845	.002	.5	81.5
25. PrivSrv, LabUrb, HHUrb, Fishery, LabRur, HHRur		.002	2.100	.004	.9	82.4
26. PrivSrv, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.003	1.954	.006	1.4	83.8
27. PrivSrv, LabUrb, HHUrb, Mfg, LabRur, HHRur		.001	2.233	.002	.5	84.4
28. PrivSrv, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.002	1.998	.003	.9	85.3
29. PrivSrv, LabUrb, HHUrb, PubServ, LabRur, HHRur		.005	1.941	.009	2.4	87.6
30. PrivSrv, LabUrb, HHUrb	.371	.180	1.443	.259	69.9	69.9
31. PrivSrv, OthCrop, LabUrb, HHUrb		.002	1.546	.002	.6	70.5
32. PrivSrv, OtLvstk, LabUrb, HHUrb		.001	1.463	.001	.3	70.8
33. PrivSrv, ProcFd, LabUrb, HHUrb		.002	1.685	.003	.8	71.5
34. PrivSrv, Mfg, LabUrb, HHUrb		.003	1.784	.006	1.5	73.1
35. PrivSrv, OthInd, LabUrb, HHUrb		.001	1.561	.002	.5	73.6
36. PrivSrv, ElGsWat, LabUrb, HHUrb		.002	1.607	.004	1.1	74.6
37. PrivSrv, Cnstrct, LabUrb, HHUrb		.001	1.459	.001	.2	74.8
38. PrivSrv, TrdTrns, LabUrb, HHUrb		.006	1.615	.010	2.8	77.6
39. PrivSrv, PubServ, LabUrb, HHUrb		.004	1.581	.006	1.6	79.2
40. PrivSrv, Capital, Entr, HHUrb		.004	1.447	.006	1.7	80.8
41. PrivSrv, ProcFd, Rice, LabUrb, HHUrb		.002	1.814	.004	1.0	81.8
42. PrivSrv, ProcFd, Rice, Land, HHUrb		.001	1.827	.002	.4	82.2
43. PrivSrv, ProcFd, TrdTrns, LabUrb, HHUrb		.001	1.862	.001	.3	82.5
44. PrivSrv, Mfg, TrdTrns, LabUrb, HHUrb		.001	1.982	.001	.3	82.8
45. PrivSrv, LabRur, HHRur, Rice, LabUrb, HHUrb		.001	1.955	.001	.3	83.1
46. PrivSrv, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.002	1.910	.003	.9	84.0
47. PrivSrv, LabRur, HHRur, OthCrop, Land, HHUrb		.001	1.910	.001	.3	84.3
48. PrivSrv, LabRur, HHRur, Pig, LabUrb, HHUrb		.001	1.846	.003	.7	85.0
49. PrivSrv, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.845	.002	.4	85.5
50. PrivSrv, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.002	1.954	.004	1.0	86.5
51. PrivSrv, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.001	1.998	.003	.8	87.3
52. PrivSrv, LabRur, HHRur, PubServ, LabUrb, HHUrb		.002	1.941	.004	1.2	88.5

4. Conclusions

Vietnam is an economy on the verge of modernization, but over two thirds of its population currently reside in the rural sector. How the country makes its way to a more diversified and advanced economy, where secondary and tertiary activites dominate value added, will depend in large part on the degree of participation enjoyed by rural households in the transitional growth process. This in turn depends on the complex web of economic linkages between rural and urban economic activities. The objective of the paper was to present and apply SAM-based analytical methods to elucidate these linkages for researchers and policy makers.

By applying block and path decomposition methods of multiplier analysis to a new Social Accounting Matrix for Vietnam, we have shown how income-expenditure chains lead across the economy and connect outwardly disparate activities through intermediate, factor, and final good demand patterns. In a few examples discussed above, we saw two aspects of rural-urban dualism in different contexts. First, Rural household income generation differs in important ways from that of their Urban counterparts. These differences are largely intuitive, direct dependence on agricultural versus secondary and tertiary activities, etc. and they indicate that traditional dualistic issues should be considered in pursuing a balanced growth strategy for Vietnam.

On the other hand, it was also found that Rural households have surprisingly diverse linkages into secondary and tertiary activities, and that the strength of these is greater than might be thought typical of an isolated agrarian peasant society. Whether this relatively significant secondary and tertiary stake for Rural households continues is of the utmost importance, because this kind of participation will be essential to maintain rural living standards during and beyond the transition to a more diversified modern economy. Many developing countries who have ignored this priority have experienced very unwelcome consequences in terms of rural poverty and migratory instability.

The present discussion was intended primarily to introduce methodology for policy research, and it should be apparent from the few examples given here that this approach could significantly reward more intensive application. Because of the complexity we have revealed about the underlying linkages in this economy, it is clear that policy makers

relying on intuition or rules-of-thumb alone are very unlikely to adequately anticipate the consequences of their actions. Having said this, at least one general policy conclusion has arisen from our brief investigations. This is that priority in today's Vietnamese economy should be given to policies that facilitate broader and more transparent participation in the marketplace. In this way, the myriad of linkages that transmit economic benefits across the economy can confer their fullest benefits on the economy, its participants, and of course those who administer it.

5. References

Defourny, J. and Thorbecke, E. (1984), "Structural Path Analysis and Multiplier Decomposition within a Social Accounting Matrix." **Economic Journal**, vol. 94, n. 373, pp. 111-136.

Gazon, J. (1979), "Une nouvelle methodologie: l'approache structurale de l'influence économique." **Economie Appliquée**, vol. 32, n. 2-3, pp. 301-337.

Lantner, R. (1974), **Theorie de la dominance économique**. Dunod, Paris.

Leontief, W. (1953), **Studies in the Structure of the American Economy**, Oxford University Press, New York.

Pyatt, G. (1985), "Commodity balances and national accounts: a SAM perspective," **Review of Income and Wealth**, Series 31, No. 1.

Pyatt, G., and J. I. Round (1979), "Accounting and fixed price multipliers in a social accounting matrix framework," E**conomic Journal**, 89, 850-873.

Pyatt, G. and J. Round (eds.) (1985), **Social Accounting Matrices: A Basis for Planning**, The World Bank, Washington, D.C..

Rand, John, David Roland-Holst, and Finn Tarp (2002), **A 2000 Social Accounting Matrix for Vietnam**, CIEM, Hanoi.

Reinert, K. A. and D. Roland-Holst (1993), "Social Accounting Matrices for Trade Policy Modeling," in J.F. Francois and K.A. Reinert, eds., **Applied Trade Policy Modeling**, Cambridge: Cambridge University Press, forthcoming.

Roland-Holst, D. (1990), "Interindustry Analysis from a Social Accounting Perspective," **Economic Systems Research**, 2:2.

Roland-Holst, D., and D. van der Mensbrugghe (1992), **Manual for the MATS Software**, Berkeley Economic Advising and Research, Berkeley.

Round, Jeffrey I. (1985), "Decomposing Multipliers for Economic Systems Involving Regional and World Trade," **Economic Journal**, 95: 383-99.

Stone, R. (1981), **Aspects of Economic and Social Modelling**, No. 126, Librairie Druz, Geneva.

Annex Tables – Household Path Decompositions for all Sectoral Activities

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
Rice, LabRur, HHRur	.619	.230	1.527	.352	56.8	56.8
Rice, Land, HHRur		.079	1.535	.121	19.5	76.3
Rice, AgServ, LabRur, HHRur		.013	1.529	.020	3.3	79.6
Rice, Forest, LabRur, HHRur		.001	1.685	.001	.2	79.8
Rice, Mfg, LabRur, HHRur		.006	1.881	.010	1.7	81.5
Rice, TrdTrns, LabRur, HHRur		.008	1.704	.013	2.1	83.6
Rice, Capital, Entr, HHRur		.001	1.531	.001	.2	83.8
Rice, AgServ, ElGsWat, LabRur, HHRur		.001	1.705	.001	.2	83.9
Rice, AgServ, TrdTrns, LabRur, HHRur		.001	1.706	.001	.2	84.1
Rice, Mfg, Forest, LabRur, HHRur		.002	2.072	.004	.6	84.7
Rice, Mfg, EnrgMin, LabRur, HHRur		.001	1.950	.002	.2	85.0
Rice, Mfg, TrdTrns, LabRur, HHRur		.001	2.084	.002	.3	85.3
Rice, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.002	1.811	.003	.5	85.7
Rice, LabUrb, HHUrb, Pig, LabRur, HHRur		.001	1.750	.001	.2	85.9
Rice, LabUrb, HHUrb, OtLvstk, LabRur, HHRur		.001	1.750	.002	.3	86.2
Rice, LabUrb, HHUrb, Fishery, LabRur, HHRur		.002	1.992	.003	.5	86.8
Rice, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.003	1.853	.005	.9	87.6
Rice, LabUrb, HHUrb, Mfg, LabRur, HHRur		.001	2.122	.002	.3	87.9
Rice, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.002	1.900	.003	.5	88.5
Rice, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.003	1.955	.006	1.0	89.5
Rice, LabUrb, HHUrb, PubServ, LabRur, HHRur		.005	1.843	.009	1.4	90.9
Rice, Land, HHUrb, OthCrop, LabRur, HHRur		.001	1.811	.001	.2	91.1
Rice, Land, HHUrb, Fishery, LabRur, HHRur		.001	1.992	.001	.2	91.4
Rice, Land, HHUrb, ProcFd, LabRur, HHRur		.001	1.853	.002	.4	91.7
Rice, Land, HHUrb, TrdTrns, LabRur, HHRur		.001	1.900	.001	.2	91.9
Rice, Land, HHUrb, PrivSrv, LabRur, HHRur		.001	1.955	.003	.4	92.4
Rice, Land, HHUrb, PubServ, LabRur, HHRur		.002	1.843	.004	.6	93.0
Rice, LabUrb, HHUrb	.484	.180	1.407	.253	52.3	52.3
Rice, Land, HHUrb		.076	1.419	.108	22.4	74.7
Rice, AgServ, LabUrb, HHUrb		.004	1.409	.005	1.1	75.8
Rice, Mfg, LabUrb, HHUrb		.004	1.742	.008	1.6	77.4
Rice, TrdTrns, LabUrb, HHUrb		.008	1.580	.012	2.5	79.9
Rice, AgServ, ElGsWat, LabUrb, HHUrb		.001	1.570	.001	.2	80.1
Rice, AgServ, TrdTrns, LabUrb, HHUrb		.001	1.582	.001	.2	80.3
Rice, Mfg, TrdTrns, LabUrb, HHUrb		.001	1.941	.002	.4	80.7
Rice, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.003	1.811	.005	1.0	81.7
Rice, LabRur, HHRur, OthCrop, Land, HHUrb		.001	1.811	.002	.3	82.0
Rice, LabRur, HHRur, Pig, LabUrb, HHUrb		.002	1.750	.004	.8	82.9
Rice, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.750	.002	.5	83.4
Rice, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.003	1.853	.006	1.2	84.6
Rice, LabRur, HHRur, Mfg, LabUrb, HHUrb		.001	2.122	.001	.3	84.9
Rice, LabRur, HHRur, TxtAprl, LabUrb, HHUrb		.001	2.301	.001	.3	85.2
Rice, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.002	1.900	.005	.9	86.1
Rice, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.004	1.955	.008	1.6	87.7
Rice, LabRur, HHRur, PubServ, LabUrb, HHUrb		.004	1.843	.007	1.4	89.1
Rice, Land, HHRur, OthCrop, LabUrb, HHUrb		.001	1.811	.002	.4	89.4
Rice, Land, HHRur, Pig, LabUrb, HHUrb		.001	1.750	.001	.3	89.7
Rice, Land, HHRur, ProcFd, LabUrb, HHUrb		.001	1.853	.002	.4	90.1
Rice, Land, HHRur, TrdTrns, LabUrb, HHUrb		.001	1.900	.002	.3	90.5
Rice, Land, HHRur, PrivSrv, LabUrb, HHUrb		.001	1.955	.003	.5	91.0
Rice, Land, HHRur, PubServ, LabUrb, HHUrb		.001	1.843	.002	.5	91.5

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
Rubber, LabRur, HHRur	.398	.092	1.508	.139	34.8	34.8
Rubber, Land, HHRur		.096	1.528	.147	37.0	71.8
Rubber, OthCrop, LabRur, HHRur		.001	1.590	.002	.4	72.2
Rubber, Mfg, LabRur, HHRur		.005	1.861	.009	2.2	74.4
Rubber, OthInd, LabRur, HHRur		.001	1.624	.001	.3	74.7
Rubber, ElGsWat, LabRur, HHRur		.002	1.682	.003	.7	75.4
Rubber, Cnstrct, LabRur, HHRur		.001	1.526	.001	.3	75.7
Rubber, TrdTrns, LabRur, HHRur		.005	1.687	.008	2.0	77.7
Rubber, PrivSrv, LabRur, HHRur		.001	1.760	.002	.6	78.3
Rubber, Capital, Entr, HHRur		.008	1.512	.012	2.9	81.2
Rubber, Mfg, Forest, LabRur, HHRur		.002	2.050	.003	.8	82.0
Rubber, Mfg, EnrgMin, LabRur, HHRur		.001	1.929	.001	.3	82.4
Rubber, Mfg, TrdTrns, LabRur, HHRur		.001	2.066	.002	.4	82.8
Rubber, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.001	1.843	.001	.2	83.0
Rubber, LabUrb, HHUrb, Fishery, LabRur, HHRur		.001	2.026	.001	.3	83.3
Rubber, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.001	1.887	.002	.4	83.7
Rubber, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.001	1.933	.001	.3	84.0
Rubber, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.001	1.990	.002	.5	84.5
Rubber, LabUrb, HHUrb, PubServ, LabRur, HHRur		.002	1.875	.003	.7	85.2
Rubber, Land, HHUrb, OthCrop, LabRur, HHRur		.001	1.843	.002	.4	85.6
Rubber, Land, HHUrb, OtLvstk, LabRur, HHRur		.001	1.780	.001	.2	85.8
Rubber, Land, HHUrb, Fishery, LabRur, HHRur		.001	2.026	.002	.5	86.3
Rubber, Land, HHUrb, ProcFd, LabRur, HHRur		.001	1.887	.003	.7	87.0
Rubber, Land, HHUrb, TrdTrns, LabRur, HHRur		.001	1.933	.002	.4	87.4
Rubber, Land, HHUrb, PrivSrv, LabRur, HHRur		.002	1.990	.003	.9	88.3
Rubber, Land, HHUrb, PubServ, LabRur, HHRur		.002	1.875	.005	1.2	89.4
Rubber, LabUrb, HHUrb	.309	.057	1.346	.077	25.0	25.0
Rubber, Land, HHUrb		.093	1.378	.129	41.6	66.5
Rubber, OthCrop, LabUrb, HHUrb		.001	1.445	.001	.4	66.9
Rubber, Mfg, LabUrb, HHUrb		.004	1.674	.007	2.1	69.0
Rubber, ElGsWat, LabUrb, HHUrb		.001	1.501	.002	.7	69.7
Rubber, TrdTrns, LabUrb, HHUrb		.005	1.518	.007	2.3	72.0
Rubber, PrivSrv, LabUrb, HHUrb		.002	1.560	.003	.8	72.8
Rubber, Capital, Entr, HHUrb		.006	1.352	.008	2.6	75.4
Rubber, Mfg, TrdTrns, LabUrb, HHUrb		.001	1.872	.001	.5	75.9
Rubber, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.001	1.843	.002	.7	76.5
Rubber, LabRur, HHRur, Pig, LabUrb, HHUrb		.001	1.781	.002	.5	77.1
Rubber, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.780	.001	.3	77.4
Rubber, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.001	1.887	.002	.8	78.1
Rubber, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.001	1.933	.002	.6	78.7
Rubber, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.002	1.990	.003	1.0	79.7
Rubber, LabRur, HHRur, PubServ, LabUrb, HHUrb		.001	1.875	.003	.9	80.6
Rubber, Land, HHRur, OthCrop, LabUrb, HHUrb		.001	1.843	.002	.7	81.3
Rubber, Land, HHRur, Pig, LabUrb, HHUrb		.001	1.781	.002	.6	81.9
Rubber, Land, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.780	.001	.3	82.2
Rubber, Land, HHRur, ProcFd, LabUrb, HHUrb		.001	1.887	.002	.8	83.0
Rubber, Land, HHRur, TrdTrns, LabUrb, HHUrb		.001	1.933	.002	.6	83.6
Rubber, Land, HHRur, PrivSrv, LabUrb, HHUrb		.002	1.990	.003	1.1	84.7
Rubber, Land, HHRur, PubServ, LabUrb, HHUrb		.002	1.875	.003	.9	85.6

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
CoffBn, LabRur, HHRur	.500	.171	1.401	.239	47.9	47.9
CoffBn, Land, HHRur		.095	1.420	.135	27.0	74.9
CoffBn, AgServ, LabRur, HHRur		.004	1.405	.005	1.0	75.9
CoffBn, Mfg, LabRur, HHRur		.009	1.729	.015	2.9	78.8
CoffBn, OthInd, LabRur, HHRur		.001	1.509	.001	.2	79.0
CoffBn, TrdTrns, LabRur, HHRur		.005	1.568	.007	1.5	80.5
CoffBn, PrivSrv, LabRur, HHRur		.001	1.635	.002	.3	80.8
CoffBn, Capital, Entr, HHRur		.004	1.405	.005	1.1	81.9
CoffBn, Mfg, Forest, LabRur, HHRur		.003	1.905	.005	1.1	82.9
CoffBn, Mfg, EnrgMin, LabRur, HHRur		.001	1.793	.002	.4	83.4
CoffBn, Mfg, TrdTrns, LabRur, HHRur		.001	1.920	.003	.5	83.9
CoffBn, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.001	1.713	.002	.3	84.2
CoffBn, LabUrb, HHUrb, OtLvstk, LabRur, HHRur		.001	1.654	.001	.2	84.4
CoffBn, LabUrb, HHUrb, Fishery, LabRur, HHRur		.001	1.883	.002	.4	84.8
CoffBn, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.002	1.754	.003	.6	85.4
CoffBn, LabUrb, HHUrb, Mfg, LabRur, HHRur		.001	2.006	.001	.2	85.6
CoffBn, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.001	1.797	.002	.4	85.9
CoffBn, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.002	1.849	.004	.7	86.7
CoffBn, LabUrb, HHUrb, PubServ, LabRur, HHRur		.003	1.742	.005	1.0	87.6
CoffBn, Land, HHUrb, OthCrop, LabRur, HHRur		.001	1.713	.001	.3	87.9
CoffBn, Land, HHUrb, Fishery, LabRur, HHRur		.001	1.883	.002	.3	88.2
CoffBn, Land, HHUrb, ProcFd, LabRur, HHRur		.001	1.754	.003	.5	88.7
CoffBn, Land, HHUrb, TrdTrns, LabRur, HHRur		.001	1.797	.002	.3	89.1
CoffBn, Land, HHUrb, PrivSrv, LabRur, HHRur		.002	1.849	.003	.6	89.7
CoffBn, Land, HHUrb, PubServ, LabRur, HHRur		.002	1.742	.004	.8	90.5
CoffBn, LabUrb, HHUrb	.370	.105	1.251	.131	35.5	35.5
CoffBn, Land, HHUrb		.092	1.280	.118	31.9	67.4
CoffBn, AgServ, LabUrb, HHUrb		.001	1.258	.001	.3	67.7
CoffBn, Mfg, LabUrb, HHUrb		.007	1.556	.011	2.9	70.6
CoffBn, TrdTrns, LabUrb, HHUrb		.005	1.411	.007	1.8	72.4
CoffBn, PrivSrv, LabUrb, HHUrb		.001	1.449	.002	.5	72.9
CoffBn, Capital, Entr, HHUrb		.003	1.256	.004	1.0	73.9
CoffBn, Mfg, EnrgMin, LabUrb, HHUrb		.001	1.614	.001	.2	74.1
CoffBn, Mfg, TrdTrns, LabUrb, HHUrb		.001	1.740	.002	.6	74.7
CoffBn, LabRur, HHRur, Rice, LabUrb, HHUrb		.001	1.753	.001	.4	75.1
CoffBn, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.002	1.713	.003	.9	76.1
CoffBn, LabRur, HHRur, OthCrop, Land, HHUrb		.001	1.713	.001	.3	76.3
CoffBn, LabRur, HHRur, Pig, LabUrb, HHUrb		.002	1.655	.003	.8	77.1
CoffBn, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.654	.002	.5	77.6
CoffBn, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.002	1.754	.004	1.1	78.7
CoffBn, LabRur, HHRur, Mfg, LabUrb, HHUrb		.001	2.006	.001	.3	79.0
CoffBn, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.002	1.797	.003	.9	79.8
CoffBn, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.003	1.849	.005	1.5	81.3
CoffBn, LabRur, HHRur, PubServ, LabUrb, HHUrb		.003	1.742	.005	1.3	82.5
CoffBn, Land, HHRur, OthCrop, LabUrb, HHUrb		.001	1.713	.002	.5	83.1
CoffBn, Land, HHRur, Pig, LabUrb, HHUrb		.001	1.655	.002	.4	83.5
CoffBn, Land, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.654	.001	.3	83.7
CoffBn, Land, HHRur, ProcFd, LabUrb, HHUrb		.001	1.754	.002	.6	84.4
CoffBn, Land, HHRur, TrdTrns, LabUrb, HHUrb		.001	1.797	.002	.5	84.8
CoffBn, Land, HHRur, PrivSrv, LabUrb, HHUrb		.002	1.849	.003	.8	85.6
CoffBn, Land, HHRur, PubServ, LabUrb, HHUrb		.001	1.742	.003	.7	86.3

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
SugCane, LabRur, HHRur	.727	.325	1.433	.466	64.2	64.2
SugCane, Land, HHRur		.089	1.451	.129	17.8	81.9
SugCane, AgServ, LabRur, HHRur		.002	1.437	.003	.4	82.3
SugCane, Forest, LabRur, HHRur		.001	1.582	.002	.2	82.5
SugCane, Mfg, LabRur, HHRur		.003	1.768	.005	.7	83.2
SugCane, TrdTrns, LabRur, HHRur		.002	1.603	.004	.5	83.8
SugCane, Mfg, Forest, LabRur, HHRur		.001	1.948	.002	.3	84.0
SugCane, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.002	1.747	.004	.5	84.5
SugCane, LabUrb, HHUrb, OthCrop, Land, HHRur		.001	1.747	.001	.1	84.7
SugCane, LabUrb, HHUrb, Pig, LabRur, HHRur		.001	1.688	.002	.2	84.9
SugCane, LabUrb, HHUrb, OtLvstk, LabRur, HHRur		.001	1.688	.002	.3	85.2
SugCane, LabUrb, HHUrb, Fishery, LabRur, HHRur		.002	1.921	.004	.6	85.8
SugCane, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.004	1.789	.007	1.0	86.8
SugCane, LabUrb, HHUrb, Mfg, LabRur, HHRur		.001	2.047	.003	.4	87.1
SugCane, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.002	1.833	.004	.6	87.7
SugCane, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.004	1.886	.008	1.2	88.9
SugCane, LabUrb, HHUrb, PubServ, LabRur, HHRur		.006	1.777	.011	1.6	90.4
SugCane, Land, HHUrb, OthCrop, LabRur, HHRur		.001	1.747	.001	.2	90.6
SugCane, Land, HHUrb, Fishery, LabRur, HHRur		.001	1.921	.002	.2	90.8
SugCane, Land, HHUrb, ProcFd, LabRur, HHRur		.001	1.789	.002	.3	91.2
SugCane, Land, HHUrb, TrdTrns, LabRur, HHRur		.001	1.833	.002	.2	91.4
SugCane, Land, HHUrb, PrivSrv, LabRur, HHRur		.002	1.886	.003	.4	91.8
SugCane, Land, HHUrb, PubServ, LabRur, HHRur		.002	1.777	.004	.6	92.4
SugCane, LabUrb, HHUrb	.563	.244	1.282	.313	55.6	55.6
SugCane, Land, HHUrb		.086	1.311	.113	20.1	75.7
SugCane, AgServ, LabUrb, HHUrb		.001	1.289	.001	.1	75.8
SugCane, Mfg, LabUrb, HHUrb		.002	1.594	.004	.7	76.5
SugCane, TrdTrns, LabUrb, HHUrb		.002	1.446	.003	.6	77.1
SugCane, LabRur, HHRur, Rice, LabUrb, HHUrb		.001	1.789	.003	.5	77.6
SugCane, LabRur, HHRur, Rice, Land, HHUrb		.001	1.789	.001	.2	77.8
SugCane, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.004	1.747	.007	1.2	79.0
SugCane, LabRur, HHRur, OthCrop, Land, HHUrb		.001	1.747	.002	.4	79.4
SugCane, LabRur, HHRur, Pig, LabUrb, HHUrb		.003	1.688	.005	1.0	80.3
SugCane, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.002	1.688	.003	.6	80.9
SugCane, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.004	1.789	.008	1.4	82.3
SugCane, LabRur, HHRur, Mfg, LabUrb, HHUrb		.001	2.047	.002	.4	82.7
SugCane, LabRur, HHRur, TxtAprl, LabUrb, HHUrb		.001	2.219	.002	.4	83.0
SugCane, LabRur, HHRur, OthInd, LabUrb, HHUrb		.001	1.804	.001	.2	83.2
SugCane, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.003	1.833	.006	1.1	84.3
SugCane, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.006	1.886	.010	1.9	86.2
SugCane, LabRur, HHRur, PubServ, LabUrb, HHUrb		.005	1.777	.009	1.6	87.8
SugCane, Land, HHRur, OthCrop, LabUrb, HHUrb		.001	1.747	.002	.3	88.1
SugCane, Land, HHRur, Pig, LabUrb, HHUrb		.001	1.688	.001	.3	88.4
SugCane, Land, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.688	.001	.2	88.5
SugCane, Land, HHRur, ProcFd, LabUrb, HHUrb		.001	1.789	.002	.4	88.9
SugCane, Land, HHRur, TrdTrns, LabUrb, HHUrb		.001	1.833	.002	.3	89.2
SugCane, Land, HHRur, PrivSrv, LabUrb, HHUrb		.002	1.886	.003	.5	89.7
SugCane, Land, HHRur, PubServ, LabUrb, HHUrb		.001	1.777	.002	.4	90.2

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
OthCrop, LabRur, HHRur	.682	.299	1.471	.439	64.4	64.4
OthCrop, Land, HHRur		.077	1.485	.115	16.9	81.3
OthCrop, AgServ, LabRur, HHRur		.003	1.475	.005	.7	82.0
OthCrop, Forest, LabRur, HHRur		.001	1.624	.001	.1	82.1
OthCrop, Mfg, LabRur, HHRur		.003	1.814	.006	.9	83.0
OthCrop, TrdTrns, LabRur, HHRur		.003	1.644	.006	.8	83.8
OthCrop, Capital, Entr, HHRur		.001	1.475	.001	.2	84.1
OthCrop, Mfg, Forest, LabRur, HHRur		.001	1.999	.002	.3	84.4
OthCrop, Mfg, TrdTrns, LabRur, HHRur		.001	2.013	.001	.2	84.5
OthCrop, LabUrb, HHUrb, Pig, LabRur, HHRur		.001	1.710	.002	.2	84.8
OthCrop, LabUrb, HHUrb, OtLvstk, LabRur, HHRur		.001	1.709	.002	.3	85.1
OthCrop, LabUrb, HHUrb, Fishery, LabRur, HHRur		.002	1.946	.004	.6	85.7
OthCrop, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.004	1.812	.007	1.0	86.8
OthCrop, LabUrb, HHUrb, Mfg, LabRur, HHRur		.001	2.073	.003	.4	87.1
OthCrop, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.002	1.856	.004	.6	87.8
OthCrop, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.004	1.910	.008	1.2	89.0
OthCrop, LabUrb, HHUrb, PubServ, LabRur, HHRur		.006	1.800	.011	1.7	90.6
OthCrop, Land, HHUrb, Fishery, LabRur, HHRur		.001	1.946	.001	.2	90.8
OthCrop, Land, HHUrb, ProcFd, LabRur, HHRur		.001	1.812	.002	.3	91.2
OthCrop, Land, HHUrb, TrdTrns, LabRur, HHRur		.001	1.856	.001	.2	91.4
OthCrop, Land, HHUrb, PrivSrv, LabRur, HHRur		.001	1.910	.003	.4	91.7
OthCrop, Land, HHUrb, PubServ, LabRur, HHRur		.002	1.800	.004	.5	92.3
OthCrop, LabUrb, HHUrb	.542	.239	1.337	.319	58.9	58.9
OthCrop, Land, HHUrb		.075	1.358	.102	18.8	77.8
OthCrop, AgServ, LabUrb, HHUrb		.001	1.344	.001	.2	78.0
OthCrop, Mfg, LabUrb, HHUrb		.003	1.660	.004	.8	78.8
OthCrop, TrdTrns, LabUrb, HHUrb		.003	1.505	.005	.9	79.7
OthCrop, Capital, Entr, HHUrb		.001	1.342	.001	.2	79.9
OthCrop, Mfg, TrdTrns, LabUrb, HHUrb		.001	1.853	.001	.2	80.1
OthCrop, LabRur, HHRur, Rice, LabUrb, HHUrb		.001	1.811	.002	.4	80.5
OthCrop, LabRur, HHRur, Rice, Land, HHUrb		.001	1.811	.001	.2	80.7
OthCrop, LabRur, HHRur, Pig, LabUrb, HHUrb		.003	1.710	.005	.9	81.7
OthCrop, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.002	1.709	.003	.6	82.3
OthCrop, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.004	1.812	.007	1.4	83.6
OthCrop, LabRur, HHRur, Mfg, LabUrb, HHUrb		.001	2.073	.002	.3	84.0
OthCrop, LabRur, HHRur, TxtAprl, LabUrb, HHUrb		.001	2.247	.002	.3	84.3
OthCrop, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.003	1.856	.006	1.1	85.4
OthCrop, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.005	1.910	.010	1.8	87.2
OthCrop, LabRur, HHRur, PubServ, LabUrb, HHUrb		.005	1.800	.008	1.6	88.7
OthCrop, Land, HHRur, Pig, LabUrb, HHUrb		.001	1.710	.001	.2	89.0
OthCrop, Land, HHRur, ProcFd, LabUrb, HHUrb		.001	1.812	.002	.4	89.3
OthCrop, Land, HHRur, TrdTrns, LabUrb, HHUrb		.001	1.856	.001	.3	89.6
OthCrop, Land, HHRur, PrivSrv, LabUrb, HHUrb		.001	1.910	.003	.5	90.1
OthCrop, Land, HHRur, PubServ, LabUrb, HHUrb		.001	1.800	.002	.4	90.5

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
Pig, LabRur, HHRur	.509	.125	1.416	.177	34.8	34.8
Pig, Land, HHRur		.009	1.433	.012	2.5	37.2
Pig, Rice, LabRur, HHRur		.028	1.547	.043	8.5	45.7
Pig, Rice, Land, HHRur		.010	1.554	.015	2.9	48.6
Pig, OthCrop, LabRur, HHRur		.024	1.491	.035	6.9	55.5
Pig, OthCrop, Land, HHRur		.006	1.505	.009	1.8	57.3
Pig, AgServ, LabRur, HHRur		.001	1.420	.001	.2	57.5
Pig, Forest, LabRur, HHRur		.020	1.563	.031	6.1	63.6
Pig, Forest, Land, HHRur		.001	1.582	.001	.3	63.9
Pig, Fishery, LabRur, HHRur		.005	1.619	.008	1.5	65.4
Pig, EnrgMin, LabRur, HHRur		.002	1.475	.002	.5	65.9
Pig, Mfg, LabRur, HHRur		.001	1.747	.001	.2	66.1
Pig, OthInd, LabRur, HHRur		.018	1.524	.028	5.4	71.6
Pig, TrdTrns, LabRur, HHRur		.011	1.582	.017	3.4	74.9
Pig, Capital, Entr, HHRur		.001	1.420	.001	.3	75.2
Pig, Rice, AgServ, LabRur, HHRur		.002	1.549	.003	.5	75.7
Pig, Rice, Mfg, LabRur, HHRur		.001	1.905	.001	.3	75.9
Pig, Rice, TrdTrns, LabRur, HHRur		.001	1.725	.002	.3	76.2
Pig, OthInd, OthCrop, LabRur, HHRur		.001	1.604	.002	.4	76.6
Pig, OthInd, Mfg, LabRur, HHRur		.001	1.875	.002	.5	77.1
Pig, OthInd, TrdTrns, LabRur, HHRur		.001	1.700	.002	.4	77.5
Pig, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.002	1.710	.003	.6	78.1
Pig, LabUrb, HHUrb, OtLvstk, LabRur, HHRur		.001	1.651	.002	.4	78.5
Pig, LabUrb, HHUrb, Fishery, LabRur, HHRur		.002	1.880	.004	.7	79.2
Pig, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.003	1.750	.006	1.1	80.4
Pig, LabUrb, HHUrb, Mfg, LabRur, HHRur		.001	2.003	.002	.4	80.8
Pig, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.002	1.793	.004	.7	81.5
Pig, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.004	1.846	.007	1.4	82.9
Pig, LabUrb, HHUrb, PubServ, LabRur, HHRur		.005	1.739	.010	1.9	84.7
Pig, LabUrb, HHUrb	.482	.207	1.272	.264	54.7	54.7
Pig, Land, HHUrb		.008	1.299	.011	2.3	57.0
Pig, Rice, LabUrb, HHUrb		.022	1.432	.031	6.5	63.5
Pig, Rice, Land, HHUrb		.009	1.442	.013	2.8	66.2
Pig, OthCrop, LabUrb, HHUrb		.019	1.362	.026	5.4	71.6
Pig, OthCrop, Land, HHUrb		.006	1.382	.008	1.7	73.3
Pig, Forest, LabUrb, HHUrb		.001	1.419	.001	.2	73.5
Pig, Forest, Land, HHUrb		.001	1.448	.001	.3	73.8
Pig, EnrgMin, LabUrb, HHUrb		.001	1.327	.001	.2	74.0
Pig, Mfg, LabUrb, HHUrb		.001	1.580	.001	.2	74.1
Pig, OthInd, LabUrb, HHUrb		.010	1.376	.014	2.9	77.1
Pig, TrdTrns, LabUrb, HHUrb		.011	1.433	.015	3.2	80.2
Pig, Capital, Entr, HHUrb		.001	1.277	.001	.2	80.4
Pig, Rice, Mfg, LabUrb, HHUrb		.001	1.772	.001	.2	80.6
Pig, Rice, TrdTrns, LabUrb, HHUrb		.001	1.605	.001	.3	80.9
Pig, OthInd, OthCrop, LabUrb, HHUrb		.001	1.471	.001	.3	81.2
Pig, OthInd, Mfg, LabUrb, HHUrb		.001	1.703	.002	.4	81.6
Pig, OthInd, TrdTrns, LabUrb, HHUrb		.001	1.546	.002	.4	82.0
Pig, TrdTrns, PrivSrv, LabUrb, HHUrb		.001	1.646	.001	.2	82.2
Pig, LabRur, HHRur, Rice, LabUrb, HHUrb		.001	1.750	.001	.2	82.4
Pig, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.001	1.710	.003	.5	82.9
Pig, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.651	.001	.3	83.2
Pig, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.002	1.750	.003	.6	83.8
Pig, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.001	1.793	.002	.5	84.3
Pig, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.002	1.846	.004	.8	85.1
Pig, LabRur, HHRur, PubServ, LabUrb, HHUrb		.002	1.739	.003	.7	85.8

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
OtLvstk, LabRur, HHRur	.627	.252	1.413	.356	56.8	56.8
OtLvstk, Land, HHRur		.011	1.431	.016	2.6	59.4
OtLvstk, Rice, LabRur, HHRur		.030	1.545	.047	7.4	66.8
OtLvstk, Rice, Land, HHRur		.010	1.552	.016	2.6	69.3
OtLvstk, OthCrop, LabRur, HHRur		.012	1.490	.018	2.9	72.3
OtLvstk, OthCrop, Land, HHRur		.003	1.503	.005	.8	73.0
OtLvstk, AgServ, LabRur, HHRur		.001	1.417	.001	.1	73.2
OtLvstk, Forest, LabRur, HHRur		.004	1.560	.006	1.0	74.2
OtLvstk, Fishery, LabRur, HHRur		.005	1.616	.009	1.4	75.6
OtLvstk, Mfg, LabRur, HHRur		.001	1.743	.001	.2	75.7
OtLvstk, OthInd, LabRur, HHRur		.005	1.522	.008	1.2	77.0
OtLvstk, TrdTrns, LabRur, HHRur		.008	1.579	.012	1.9	78.9
OtLvstk, Capital, Entr, HHRur		.001	1.417	.001	.2	79.1
OtLvstk, Rice, AgServ, LabRur, HHRur		.002	1.547	.003	.4	79.5
OtLvstk, Rice, Mfg, LabRur, HHRur		.001	1.903	.001	.2	79.8
OtLvstk, Rice, TrdTrns, LabRur, HHRur		.001	1.722	.002	.3	80.0
OtLvstk, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.003	1.709	.004	.7	80.7
OtLvstk, LabUrb, HHUrb, OthCrop, Land, HHRur		.001	1.709	.001	.2	80.9
OtLvstk, LabUrb, HHUrb, Pig, LabRur, HHRur		.001	1.651	.002	.3	81.2
OtLvstk, LabUrb, HHUrb, Fishery, LabRur, HHRur		.003	1.879	.005	.8	82.0
OtLvstk, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.005	1.750	.008	1.3	83.3
OtLvstk, LabUrb, HHUrb, Mfg, LabRur, HHRur		.001	2.003	.003	.5	83.7
OtLvstk, LabUrb, HHUrb, OthInd, LabRur, HHRur		.001	1.765	.001	.2	83.9
OtLvstk, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.003	1.793	.005	.8	84.7
OtLvstk, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.005	1.845	.010	1.5	86.2
OtLvstk, LabUrb, HHUrb, PubServ, LabRur, HHRur		.008	1.739	.013	2.1	88.3
OtLvstk, LabUrb, HHUrb	.565	.284	1.263	.359	63.6	63.6
OtLvstk, Land, HHUrb		.011	1.292	.014	2.5	66.1
OtLvstk, Rice, LabUrb, HHUrb		.024	1.424	.034	5.9	72.0
OtLvstk, Rice, Land, HHUrb		.010	1.436	.014	2.5	74.6
OtLvstk, OthCrop, LabUrb, HHUrb		.010	1.355	.013	2.4	76.9
OtLvstk, OthCrop, Land, HHUrb		.003	1.376	.004	.8	77.7
OtLvstk, OthInd, LabUrb, HHUrb		.003	1.369	.004	.7	78.4
OtLvstk, TrdTrns, LabUrb, HHUrb		.008	1.423	.011	1.9	80.3
OtLvstk, Capital, Entr, HHUrb		.001	1.269	.001	.2	80.5
OtLvstk, Rice, Mfg, LabUrb, HHUrb		.001	1.763	.001	.2	80.7
OtLvstk, Rice, TrdTrns, LabUrb, HHUrb		.001	1.597	.002	.3	80.9
OtLvstk, LabRur, HHRur, Rice, LabUrb, HHUrb		.001	1.750	.002	.3	81.3
OtLvstk, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.003	1.709	.005	.9	82.2
OtLvstk, LabRur, HHRur, OthCrop, Land, HHUrb		.001	1.709	.002	.3	82.5
OtLvstk, LabRur, HHRur, Pig, LabUrb, HHUrb		.002	1.651	.004	.7	83.2
OtLvstk, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.003	1.750	.006	1.1	84.3
OtLvstk, LabRur, HHRur, Mfg, LabUrb, HHUrb		.001	2.003	.002	.3	84.5
OtLvstk, LabRur, HHRur, TxtAprl, LabUrb, HHUrb		.001	2.171	.002	.3	84.8
OtLvstk, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.003	1.793	.005	.8	85.6
OtLvstk, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.004	1.845	.008	1.4	87.0
OtLvstk, LabRur, HHRur, PubServ, LabUrb, HHUrb		.004	1.739	.007	1.2	88.3

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
AgServ, LabRur, HHRur	.492	.238	1.399	.334	67.8	67.8
AgServ, Pig, LabRur, HHRur		.001	1.420	.001	.2	68.0
AgServ, EnrgMin, LabRur, HHRur		.001	1.457	.001	.2	68.3
AgServ, ProcFd, LabRur, HHRur		.002	1.561	.003	.7	68.9
AgServ, Mfg, LabRur, HHRur		.008	1.726	.013	2.6	71.6
AgServ, OthInd, LabRur, HHRur		.002	1.506	.003	.7	72.3
AgServ, ElGsWat, LabRur, HHRur		.011	1.560	.017	3.5	75.8
AgServ, Cnstrct, LabRur, HHRur		.005	1.415	.007	1.5	77.3
AgServ, TrdTrns, LabRur, HHRur		.011	1.565	.016	3.3	80.6
AgServ, PrivSrv, LabRur, HHRur		.003	1.632	.005	1.0	81.6
AgServ, PubServ, LabRur, HHRur		.002	1.513	.003	.5	82.1
AgServ, Capital, Entr, HHRur		.003	1.403	.004	.8	82.9
AgServ, ProcFd, Rice, LabRur, HHRur		.002	1.663	.003	.7	83.5
AgServ, ProcFd, Rice, Land, HHRur		.001	1.670	.001	.2	83.8
AgServ, ProcFd, Fishery, LabRur, HHRur		.001	1.782	.001	.2	84.0
AgServ, Mfg, Forest, LabRur, HHRur		.003	1.902	.005	1.0	85.0
AgServ, Mfg, EnrgMin, LabRur, HHRur		.001	1.789	.002	.4	85.3
AgServ, Mfg, TrdTrns, LabRur, HHRur		.001	1.916	.002	.5	85.8
AgServ, ElGsWat, Mfg, LabRur, HHRur		.001	1.914	.002	.3	86.1
AgServ, ElGsWat, Capital, Entr, HHRur		.001	1.564	.002	.4	86.6
AgServ, Cnstrct, EnrgMin, LabRur, HHRur		.001	1.473	.001	.2	86.8
AgServ, Cnstrct, Mfg, LabRur, HHRur		.001	1.745	.001	.2	87.0
AgServ, Cnstrct, TrdTrns, LabRur, HHRur		.001	1.582	.001	.2	87.2
AgServ, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.001	1.708	.001	.2	87.4
AgServ, LabUrb, HHUrb, Fishery, LabRur, HHRur		.001	1.878	.001	.2	87.7
AgServ, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.001	1.748	.002	.4	88.1
AgServ, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.001	1.792	.001	.2	88.3
AgServ, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.001	1.844	.002	.5	88.8
AgServ, LabUrb, HHUrb, PubServ, LabRur, HHRur		.002	1.738	.003	.6	89.4
AgServ, LabUrb, HHUrb	.259	.067	1.252	.084	32.5	32.5
AgServ, Pig, LabUrb, HHUrb		.001	1.279	.002	.7	33.2
AgServ, ProcFd, LabUrb, HHUrb		.001	1.468	.002	.8	34.0
AgServ, Mfg, LabUrb, HHUrb		.006	1.556	.009	3.7	37.6
AgServ, OthInd, LabUrb, HHUrb		.001	1.357	.002	.7	38.3
AgServ, ElGsWat, LabUrb, HHUrb		.010	1.396	.014	5.6	43.8
AgServ, Cnstrct, LabUrb, HHUrb		.002	1.267	.003	1.2	45.0
AgServ, TrdTrns, LabUrb, HHUrb		.010	1.412	.015	5.7	50.7
AgServ, PrivSrv, LabUrb, HHUrb		.004	1.450	.005	2.0	52.7
AgServ, PubServ, LabUrb, HHUrb		.001	1.379	.001	.5	53.3
AgServ, Capital, Entr, HHUrb		.002	1.258	.003	1.0	54.3
AgServ, ProcFd, Rice, LabUrb, HHUrb		.002	1.580	.003	1.0	55.2
AgServ, ProcFd, Rice, Land, HHUrb		.001	1.591	.001	.4	55.6
AgServ, Mfg, TrdTrns, LabUrb, HHUrb		.001	1.740	.002	.8	56.5
AgServ, ElGsWat, Mfg, LabUrb, HHUrb		.001	1.726	.001	.4	56.9
AgServ, ElGsWat, Capital, Entr, HHUrb		.001	1.401	.001	.5	57.5
AgServ, Cnstrct, TrdTrns, LabUrb, HHUrb		.001	1.428	.001	.4	57.8
AgServ, TrdTrns, PrivSrv, LabUrb, HHUrb		.001	1.623	.001	.4	58.2
AgServ, LabRur, HHRur, Rice, LabUrb, HHUrb		.001	1.747	.002	.7	58.9
AgServ, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.003	1.708	.005	1.9	60.8
AgServ, LabRur, HHRur, OthCrop, Land, HHUrb		.001	1.708	.002	.6	61.4
AgServ, LabRur, HHRur, Pig, LabUrb, HHUrb		.002	1.650	.004	1.5	62.9
AgServ, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.650	.002	.9	63.8
AgServ, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.003	1.748	.006	2.2	66.0
AgServ, LabRur, HHRur, Mfg, LabUrb, HHUrb		.001	2.001	.001	.6	66.6
AgServ, LabRur, HHRur, TxtAprl, LabUrb, HHUrb		.001	2.169	.001	.6	67.1
AgServ, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.002	1.792	.004	1.7	68.8
AgServ, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.004	1.844	.008	2.9	71.7
AgServ, LabRur, HHRur, PubServ, LabUrb, HHUrb		.004	1.738	.007	2.5	74.2

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
Forest, LabRur, HHRur	1.009	.599	1.540	.922	91.4	91.4
Forest, Land, HHRur		.028	1.560	.043	4.3	95.7
Forest, Mfg, LabRur, HHRur		.002	1.897	.003	.3	96.1
Forest, TrdTrns, LabRur, HHRur		.006	1.722	.010	1.0	97.0
Forest, PrivSrv, LabRur, HHRur		.001	1.797	.002	.2	97.2
Forest, Capital, Entr, HHRur		.001	1.544	.002	.2	97.4
Forest, LabUrb, HHUrb, PubServ, LabRur, HHRur		.001	1.913	.001	.1	97.5
Forest, Land, HHUrb, PubServ, LabRur, HHRur		.001	1.913	.001	.1	97.7
Forest, LabUrb, HHUrb	.290	.020	1.391	.028	9.8	9.8
Forest, Land, HHUrb		.027	1.423	.038	13.2	23.0
Forest, Mfg, LabUrb, HHUrb		.001	1.719	.003	.9	23.8
Forest, TrdTrns, LabUrb, HHUrb		.006	1.568	.009	3.1	27.0
Forest, PrivSrv, LabUrb, HHUrb		.001	1.610	.002	.7	27.6
Forest, Capital, Entr, HHUrb		.001	1.397	.001	.5	28.1
Forest, LabRur, HHRur, Rice, LabUrb, HHUrb		.003	1.925	.005	1.8	29.9
Forest, LabRur, HHRur, Rice, Land, HHUrb		.001	1.925	.002	.8	30.6
Forest, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.007	1.881	.013	4.6	35.3
Forest, LabRur, HHRur, OthCrop, Land, HHUrb		.002	1.881	.004	1.5	36.7
Forest, LabRur, HHRur, Pig, LabUrb, HHUrb		.006	1.817	.011	3.7	40.5
Forest, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.004	1.817	.007	2.3	42.8
Forest, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.008	1.926	.016	5.4	48.2
Forest, LabRur, HHRur, Mfg, LabUrb, HHUrb		.002	2.200	.004	1.4	49.6
Forest, LabRur, HHRur, TxtAprl, LabUrb, HHUrb		.002	2.389	.004	1.4	51.0
Forest, LabRur, HHRur, OthInd, LabUrb, HHUrb		.001	1.942	.002	.6	51.6
Forest, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.006	1.973	.012	4.2	55.8
Forest, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.010	2.031	.021	7.2	63.0
Forest, LabRur, HHRur, PubServ, LabUrb, HHUrb		.009	1.913	.018	6.2	69.2
Fishery, LabRur, HHRur	.883	.504	1.595	.804	91.1	91.1
Fishery, Land, HHRur		.002	1.616	.002	.3	91.4
Fishery, Forest, LabRur, HHRur		.002	1.761	.004	.4	91.8
Fishery, Mfg, LabRur, HHRur		.002	1.967	.004	.4	92.2
Fishery, OthInd, LabRur, HHRur		.005	1.717	.009	1.0	93.2
Fishery, TrdTrns, LabRur, HHRur		.007	1.783	.013	1.4	94.7
Fishery, PrivSrv, LabRur, HHRur		.006	1.860	.012	1.3	96.0
Fishery, Capital, Entr, HHRur		.002	1.599	.003	.4	96.3
Fishery, Mfg, Forest, LabRur, HHRur		.001	2.168	.001	.1	96.5
Fishery, LabUrb, HHUrb	.251	.017	1.474	.025	10.0	10.0
Fishery, Land, HHUrb		.001	1.508	.002	.9	10.9
Fishery, Mfg, LabUrb, HHUrb		.001	1.831	.003	1.1	12.0
Fishery, OthInd, LabUrb, HHUrb		.003	1.596	.005	1.9	13.9
Fishery, TrdTrns, LabUrb, HHUrb		.007	1.660	.012	4.7	18.6
Fishery, PrivSrv, LabUrb, HHUrb		.008	1.704	.013	5.2	23.8
Fishery, Capital, Entr, HHUrb		.001	1.480	.002	.9	24.7
Fishery, LabRur, HHRur, Rice, LabUrb, HHUrb		.002	1.992	.004	1.8	26.5
Fishery, LabRur, HHRur, Rice, Land, HHUrb		.001	1.992	.002	.8	27.3
Fishery, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.006	1.946	.012	4.7	31.9
Fishery, LabRur, HHRur, OthCrop, Land, HHUrb		.002	1.946	.004	1.5	33.4
Fishery, LabRur, HHRur, Pig, LabUrb, HHUrb		.005	1.880	.009	3.8	37.1
Fishery, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.003	1.879	.006	2.3	39.5
Fishery, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.007	1.991	.014	5.4	44.9
Fishery, LabRur, HHRur, Mfg, LabUrb, HHUrb		.002	2.279	.003	1.4	46.3
Fishery, LabRur, HHRur, TxtAprl, LabUrb, HHUrb		.001	2.471	.003	1.4	47.7
Fishery, LabRur, HHRur, OthInd, LabUrb, HHUrb		.001	2.009	.002	.6	48.3
Fishery, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.005	2.041	.011	4.2	52.6
Fishery, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.009	2.100	.018	7.2	59.8
Fishery, LabRur, HHRur, PubServ, LabUrb, HHUrb		.008	1.979	.016	6.3	66.0

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
EnrgMin, LabRur, HHRur	.432	.217	1.453	.315	72.9	72.9
EnrgMin, Forest, LabRur, HHRur		.001	1.604	.002	.4	73.3
EnrgMin, Mfg, LabRur, HHRur		.003	1.785	.006	1.4	74.7
EnrgMin, OthInd, LabRur, HHRur		.001	1.564	.002	.4	75.1
EnrgMin, ElGsWat, LabRur, HHRur		.002	1.619	.003	.7	75.7
EnrgMin, TrdTrns, LabRur, HHRur		.008	1.624	.014	3.1	78.9
EnrgMin, PrivSrv, LabRur, HHRur		.010	1.694	.016	3.7	82.6
EnrgMin, Capital, Entr, HHRur		.008	1.457	.012	2.7	85.3
EnrgMin, Mfg, Forest, LabRur, HHRur		.001	1.966	.002	.5	85.8
EnrgMin, Mfg, TrdTrns, LabRur, HHRur		.001	1.981	.001	.3	86.1
EnrgMin, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.001	1.773	.002	.3	86.4
EnrgMin, LabUrb, HHUrb, OtLvstk, LabRur, HHRur		.001	1.713	.001	.2	86.6
EnrgMin, LabUrb, HHUrb, Fishery, LabRur, HHRur		.001	1.949	.002	.4	87.0
EnrgMin, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.002	1.815	.003	.6	87.7
EnrgMin, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.001	1.860	.002	.4	88.1
EnrgMin, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.002	1.913	.003	.8	88.8
EnrgMin, LabUrb, HHUrb, PubServ, LabRur, HHRur		.003	1.804	.005	1.1	89.9
EnrgMin, LabUrb, HHUrb	.260	.095	1.300	.124	47.7	47.7
EnrgMin, Mfg, LabUrb, HHUrb		.003	1.607	.004	1.7	49.4
EnrgMin, OthInd, LabUrb, HHUrb		.001	1.408	.001	.3	49.7
EnrgMin, ElGsWat, LabUrb, HHUrb		.002	1.448	.002	.9	50.7
EnrgMin, TrdTrns, LabUrb, HHUrb		.008	1.465	.012	4.7	55.3
EnrgMin, PrivSrv, LabUrb, HHUrb		.012	1.504	.018	6.9	62.2
EnrgMin, Capital, Entr, HHUrb		.006	1.305	.008	3.0	65.2
EnrgMin, Mfg, TrdTrns, LabUrb, HHUrb		.001	1.797	.001	.4	65.6
EnrgMin, LabRur, HHRur, Rice, LabUrb, HHUrb		.001	1.815	.002	.7	66.3
EnrgMin, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.003	1.773	.005	1.8	68.0
EnrgMin, LabRur, HHRur, OthCrop, Land, HHUrb		.001	1.773	.001	.6	68.6
EnrgMin, LabRur, HHRur, Pig, LabUrb, HHUrb		.002	1.713	.004	1.4	70.0
EnrgMin, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.713	.002	.9	70.9
EnrgMin, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.003	1.815	.005	2.1	73.0
EnrgMin, LabRur, HHRur, Mfg, LabUrb, HHUrb		.001	2.070	.001	.5	73.5
EnrgMin, LabRur, HHRur, TxtAprl, LabUrb, HHUrb		.001	2.252	.001	.5	74.0
EnrgMin, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.002	1.860	.004	1.6	75.6
EnrgMin, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.004	1.913	.007	2.7	78.3
EnrgMin, LabRur, HHRur, PubServ, LabUrb, HHUrb		.003	1.804	.006	2.4	80.7

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
ProcFd, LabRur, HHRur	.554	.091	1.558	.142	25.6	25.6
ProcFd, Rice, LabRur, HHRur		.086	1.661	.143	25.8	51.4
ProcFd, Rice, Land, HHRur		.029	1.668	.049	8.8	60.2
ProcFd, SugCane, LabRur, HHRur		.007	1.598	.012	2.1	62.4
ProcFd, SugCane, Land, HHRur		.002	1.606	.003	.6	62.9
ProcFd, OthCrop, LabRur, HHRur		.007	1.639	.012	2.1	65.0
ProcFd, OthCrop, Land, HHRur		.002	1.643	.003	.5	65.6
ProcFd, Pig, LabRur, HHRur		.001	1.580	.001	.2	65.8
ProcFd, OtLvstk, LabRur, HHRur		.002	1.577	.004	.7	66.5
ProcFd, Fishery, LabRur, HHRur		.024	1.780	.043	7.8	74.3
ProcFd, Mfg, LabRur, HHRur		.001	1.918	.003	.5	74.8
ProcFd, ElGsWat, LabRur, HHRur		.001	1.737	.002	.3	75.1
ProcFd, TrdTrns, LabRur, HHRur		.020	1.727	.034	6.1	81.2
ProcFd, PrivSrv, LabRur, HHRur		.001	1.809	.002	.4	81.6
ProcFd, Capital, Entr, HHRur		.002	1.562	.004	.6	82.3
ProcFd, Rice, AgServ, LabRur, HHRur		.005	1.663	.008	1.5	83.8
ProcFd, Rice, Mfg, LabRur, HHRur		.002	2.044	.004	.8	84.5
ProcFd, Rice, TrdTrns, LabRur, HHRur		.003	1.840	.005	1.0	85.5
ProcFd, TrdTrns, PrivSrv, LabRur, HHRur		.001	1.992	.002	.3	85.8
ProcFd, TrdTrns, Capital, Entr, HHRur		.001	1.729	.001	.2	86.0
ProcFd, Rice, Mfg, Forest, LabRur, HHRur		.001	2.252	.002	.3	86.3
ProcFd, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.001	1.812	.001	.2	86.4
ProcFd, LabUrb, HHUrb, Fishery, LabRur, HHRur		.001	1.991	.001	.2	86.6
ProcFd, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.001	1.898	.001	.2	86.8
ProcFd, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.001	1.954	.002	.4	87.2
ProcFd, LabUrb, HHUrb, PubServ, LabRur, HHRur		.002	1.843	.003	.5	87.7
ProcFd, LabUrb, HHUrb	.400	.059	1.465	.086	21.5	21.5
ProcFd, Rice, LabUrb, HHUrb		.067	1.578	.106	26.4	47.9
ProcFd, Rice, Land, HHUrb		.028	1.589	.045	11.3	59.2
ProcFd, SugCane, LabUrb, HHUrb		.005	1.503	.008	2.1	61.3
ProcFd, SugCane, Land, HHUrb		.002	1.518	.003	.7	62.0
ProcFd, OthCrop, LabUrb, HHUrb		.006	1.563	.009	2.2	64.2
ProcFd, OthCrop, Land, HHUrb		.002	1.570	.003	.7	64.9
ProcFd, Pig, LabUrb, HHUrb		.001	1.493	.002	.4	65.3
ProcFd, OtLvstk, LabUrb, HHUrb		.003	1.483	.004	1.0	66.4
ProcFd, Fishery, LabUrb, HHUrb		.001	1.712	.001	.4	66.7
ProcFd, Mfg, LabUrb, HHUrb		.001	1.810	.002	.5	67.3
ProcFd, ElGsWat, LabUrb, HHUrb		.001	1.631	.001	.3	67.6
ProcFd, TrdTrns, LabUrb, HHUrb		.019	1.628	.031	7.9	75.5
ProcFd, PrivSrv, LabUrb, HHUrb		.002	1.685	.003	.7	76.2
ProcFd, Capital, Entr, HHUrb		.002	1.469	.003	.6	76.8
ProcFd, Rice, AgServ, LabUrb, HHUrb		.001	1.580	.002	.6	77.4
ProcFd, Rice, Mfg, LabUrb, HHUrb		.002	1.948	.003	.8	78.2
ProcFd, Rice, TrdTrns, LabUrb, HHUrb		.003	1.753	.005	1.2	79.4
ProcFd, TrdTrns, PrivSrv, LabUrb, HHUrb		.001	1.862	.002	.5	79.9
ProcFd, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.001	1.812	.002	.5	80.4
ProcFd, LabRur, HHRur, Pig, LabUrb, HHUrb		.001	1.750	.002	.4	80.8
ProcFd, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.750	.001	.2	81.1
ProcFd, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.001	1.898	.002	.4	81.5
ProcFd, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.002	1.954	.003	.8	82.3
ProcFd, LabRur, HHRur, PubServ, LabUrb, HHUrb		.001	1.843	.003	.7	82.9

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
Mfg, LabRur, HHRur	.328	.085	1.721	.147	44.8	44.8
Mfg, Forest, LabRur, HHRur		.028	1.897	.054	16.4	61.2
Mfg, Forest, Land, HHRur		.001	1.921	.003	.8	62.0
Mfg, Fishery, LabRur, HHRur		.001	1.967	.002	.7	62.7
Mfg, EnrgMin, LabRur, HHRur		.012	1.785	.021	6.5	69.2
Mfg, OthInd, LabRur, HHRur		.001	1.849	.002	.8	69.9
Mfg, ElGsWat, LabRur, HHRur		.003	1.910	.006	1.8	71.7
Mfg, TrdTrns, LabRur, HHRur		.014	1.911	.027	8.1	79.9
Mfg, PrivSrv, LabRur, HHRur		.003	1.999	.006	1.7	81.6
Mfg, PubServ, LabRur, HHRur		.001	1.859	.001	.3	81.9
Mfg, Capital, Entr, HHRur		.003	1.725	.005	1.5	83.4
Mfg, EnrgMin, PrivSrv, LabRur, HHRur		.001	2.071	.001	.3	83.8
Mfg, TrdTrns, PrivSrv, LabRur, HHRur		.001	2.204	.001	.4	84.2
Mfg, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.001	2.073	.001	.4	84.6
Mfg, LabUrb, HHUrb, Fishery, LabRur, HHRur		.001	2.279	.001	.5	85.0
Mfg, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.001	2.122	.002	.7	85.7
Mfg, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.001	2.166	.001	.4	86.2
Mfg, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.001	2.233	.003	.9	87.0
Mfg, LabUrb, HHUrb, PubServ, LabRur, HHRur		.002	2.108	.004	1.2	88.2
Mfg, LabUrb, HHUrb	.227	.069	1.548	.107	47.1	47.1
Mfg, Forest, LabUrb, HHUrb		.001	1.719	.002	.7	47.8
Mfg, Forest, Land, HHUrb		.001	1.757	.002	1.0	48.8
Mfg, EnrgMin, LabUrb, HHUrb		.005	1.607	.008	3.7	52.5
Mfg, OthInd, LabUrb, HHUrb		.001	1.672	.001	.6	53.1
Mfg, ElGsWat, LabUrb, HHUrb		.003	1.717	.005	2.2	55.3
Mfg, TrdTrns, LabUrb, HHUrb		.014	1.732	.024	10.6	65.8
Mfg, PrivSrv, LabUrb, HHUrb		.003	1.784	.006	2.7	68.6
Mfg, Capital, Entr, HHUrb		.002	1.554	.003	1.5	70.1
Mfg, EnrgMin, PrivSrv, LabUrb, HHUrb		.001	1.850	.001	.5	70.6
Mfg, TrdTrns, PrivSrv, LabUrb, HHUrb		.001	1.982	.001	.6	71.3
Mfg, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.001	2.073	.002	.9	72.2
Mfg, LabRur, HHRur, Pig, LabUrb, HHUrb		.001	2.003	.002	.7	72.9
Mfg, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	2.003	.001	.5	73.4
Mfg, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.001	2.122	.002	1.1	74.5
Mfg, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.001	2.166	.002	.8	75.3
Mfg, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.001	2.233	.003	1.4	76.8
Mfg, LabRur, HHRur, PubServ, LabUrb, HHUrb		.001	2.108	.003	1.2	78.0

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
TxtAprl, LabRur, HHRur	.293	.087	1.845	.160	54.7	54.7
TxtAprl, OthCrop, LabRur, HHRur		.003	1.946	.007	2.3	57.0
TxtAprl, OthCrop, Land, HHRur		.001	1.964	.002	.6	57.6
TxtAprl, Mfg, LabRur, HHRur		.004	2.275	.009	3.0	60.6
TxtAprl, OthInd, LabRur, HHRur		.002	1.986	.005	1.6	62.1
TxtAprl, ElGsWat, LabRur, HHRur		.003	2.057	.006	1.9	64.0
TxtAprl, TrdTrns, LabRur, HHRur		.009	2.063	.018	6.2	70.3
TxtAprl, PrivSrv, LabRur, HHRur		.003	2.152	.006	2.2	72.5
TxtAprl, Capital, Entr, HHRur		.002	1.850	.003	1.1	73.6
TxtAprl, Mfg, Forest, LabRur, HHRur		.001	2.507	.003	1.1	74.7
TxtAprl, Mfg, EnrgMin, LabRur, HHRur		.001	2.359	.001	.4	75.1
TxtAprl, Mfg, TrdTrns, LabRur, HHRur		.001	2.524	.002	.5	75.7
TxtAprl, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.001	2.247	.002	.7	76.4
TxtAprl, LabUrb, HHUrb, OtLvstk, LabRur, HHRur		.001	2.171	.001	.4	76.8
TxtAprl, LabUrb, HHUrb, Fishery, LabRur, HHRur		.001	2.471	.002	.8	77.6
TxtAprl, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.002	2.301	.004	1.3	78.8
TxtAprl, LabUrb, HHUrb, Mfg, LabRur, HHRur		.001	2.632	.001	.5	79.3
TxtAprl, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.001	2.357	.002	.8	80.1
TxtAprl, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.002	2.426	.005	1.5	81.6
TxtAprl, LabUrb, HHUrb, PubServ, LabRur, HHRur		.003	2.286	.006	2.1	83.7
TxtAprl, LabUrb, HHUrb	.272	.102	1.652	.168	61.7	61.7
TxtAprl, OthCrop, LabUrb, HHUrb		.003	1.773	.005	1.8	63.5
TxtAprl, OthCrop, Land, HHUrb		.001	1.801	.002	.6	64.0
TxtAprl, Mfg, LabUrb, HHUrb		.003	2.052	.006	2.3	66.4
TxtAprl, OthInd, LabUrb, HHUrb		.001	1.789	.002	.9	67.2
TxtAprl, ElGsWat, LabUrb, HHUrb		.002	1.841	.005	1.7	68.9
TxtAprl, TrdTrns, LabUrb, HHUrb		.009	1.862	.016	6.0	74.9
TxtAprl, PrivSrv, LabUrb, HHUrb		.004	1.913	.007	2.6	77.5
TxtAprl, Capital, Entr, HHUrb		.001	1.659	.002	.8	78.4
TxtAprl, Mfg, TrdTrns, LabUrb, HHUrb		.001	2.293	.001	.5	78.9
TxtAprl, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.001	2.247	.002	.9	79.7
TxtAprl, LabRur, HHRur, Pig, LabUrb, HHUrb		.001	2.171	.002	.7	80.4
TxtAprl, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	2.171	.001	.4	80.9
TxtAprl, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.001	2.301	.003	1.0	81.9
TxtAprl, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.001	2.357	.002	.8	82.6
TxtAprl, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.001	2.426	.004	1.3	84.0
TxtAprl, LabRur, HHRur, PubServ, LabUrb, HHUrb		.001	2.286	.003	1.1	85.1

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
OthInd, LabRur, HHRur	.380	.147	1.502	.221	58.1	58.1
OthInd, Rice, LabRur, HHRur		.001	1.644	.002	.5	58.5
OthInd, OthCrop, LabRur, HHRur		.010	1.584	.016	4.2	62.7
OthInd, OthCrop, Land, HHRur		.003	1.599	.004	1.1	63.8
OthInd, EnrgMin, LabRur, HHRur		.002	1.564	.002	.6	64.5
OthInd, ProcFd, LabRur, HHRur		.002	1.677	.004	1.0	65.5
OthInd, Mfg, LabRur, HHRur		.010	1.849	.019	4.9	70.3
OthInd, TxtAprl, LabRur, HHRur		.002	1.986	.004	.9	71.3
OthInd, ElGsWat, LabRur, HHRur		.001	1.675	.002	.5	71.8
OthInd, TrdTrns, LabRur, HHRur		.010	1.678	.017	4.5	76.3
OthInd, PrivSrv, LabRur, HHRur		.002	1.751	.004	1.0	77.2
OthInd, Capital, Entr, HHRur		.003	1.506	.004	1.2	78.4
OthInd, ProcFd, Rice, LabRur, HHRur		.002	1.787	.004	1.0	79.4
OthInd, ProcFd, Rice, Land, HHRur		.001	1.794	.001	.3	79.7
OthInd, ProcFd, Fishery, LabRur, HHRur		.001	1.915	.001	.3	80.0
OthInd, Mfg, Forest, LabRur, HHRur		.003	2.037	.007	1.8	81.8
OthInd, Mfg, EnrgMin, LabRur, HHRur		.001	1.916	.003	.7	82.5
OthInd, Mfg, TrdTrns, LabRur, HHRur		.002	2.050	.003	.9	83.4
OthInd, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.001	1.827	.001	.4	83.8
OthInd, LabUrb, HHUrb, Fishery, LabRur, HHRur		.001	2.009	.002	.4	84.2
OthInd, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.001	1.870	.002	.6	84.8
OthInd, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.001	1.915	.002	.4	85.2
OthInd, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.002	1.972	.003	.8	86.0
OthInd, LabUrb, HHUrb, PubServ, LabRur, HHRur		.002	1.858	.004	1.1	87.1
OthInd, LabUrb, HHUrb	.259	.083	1.349	.112	43.1	43.1
OthInd, Rice, LabUrb, HHUrb		.001	1.523	.001	.5	43.6
OthInd, OthCrop, LabUrb, HHUrb		.008	1.447	.012	4.5	48.1
OthInd, OthCrop, Land, HHUrb		.003	1.470	.004	1.4	49.6
OthInd, EnrgMin, LabUrb, HHUrb		.001	1.408	.001	.4	50.0
OthInd, ProcFd, LabUrb, HHUrb		.001	1.584	.002	.9	50.8
OthInd, Mfg, LabUrb, HHUrb		.008	1.672	.014	5.2	56.1
OthInd, TxtAprl, LabUrb, HHUrb		.002	1.789	.004	1.5	57.5
OthInd, ElGsWat, LabUrb, HHUrb		.001	1.504	.002	.6	58.1
OthInd, TrdTrns, LabUrb, HHUrb		.010	1.519	.015	5.9	64.0
OthInd, PrivSrv, LabUrb, HHUrb		.003	1.561	.004	1.6	65.6
OthInd, Capital, Entr, HHUrb		.002	1.355	.003	1.2	66.8
OthInd, ProcFd, Rice, LabUrb, HHUrb		.002	1.705	.003	1.1	67.9
OthInd, ProcFd, Rice, Land, HHUrb		.001	1.717	.001	.5	68.4
OthInd, Mfg, EnrgMin, LabUrb, HHUrb		.001	1.735	.001	.4	68.8
OthInd, Mfg, TrdTrns, LabUrb, HHUrb		.002	1.867	.003	1.2	69.9
OthInd, TrdTrns, PrivSrv, LabUrb, HHUrb		.001	1.744	.001	.4	70.3
OthInd, LabRur, HHRur, Rice, LabUrb, HHUrb		.001	1.870	.001	.5	70.8
OthInd, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.002	1.827	.003	1.2	72.0
OthInd, LabRur, HHRur, OthCrop, Land, HHUrb		.001	1.827	.001	.4	72.4
OthInd, LabRur, HHRur, Pig, LabUrb, HHUrb		.001	1.765	.003	1.0	73.4
OthInd, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.765	.002	.6	74.0
OthInd, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.002	1.870	.004	1.4	75.5
OthInd, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.002	1.915	.003	1.1	76.6
OthInd, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.003	1.972	.005	1.9	78.5
OthInd, LabRur, HHRur, PubServ, LabUrb, HHUrb		.002	1.858	.004	1.7	80.2

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
ElGsWat, LabRur, HHRur	.242	.090	1.556	.140	57.9	57.9
ElGsWat, EnrgMin, LabRur, HHRur		.002	1.619	.004	1.6	59.5
ElGsWat, Mfg, LabRur, HHRur		.007	1.910	.013	5.3	64.8
ElGsWat, OthInd, LabRur, HHRur		.001	1.675	.002	1.0	65.8
ElGsWat, Cnstrct, LabRur, HHRur		.001	1.574	.002	.7	66.5
ElGsWat, TrdTrns, LabRur, HHRur		.003	1.738	.006	2.3	68.8
ElGsWat, PrivSrv, LabRur, HHRur		.001	1.813	.001	.4	69.3
ElGsWat, PubServ, LabRur, HHRur		.001	1.681	.001	.4	69.6
ElGsWat, Capital, Entr, HHRur		.011	1.560	.017	6.9	76.5
ElGsWat, Mfg, Forest, LabRur, HHRur		.002	2.104	.005	2.0	78.5
ElGsWat, Mfg, EnrgMin, LabRur, HHRur		.001	1.979	.002	.8	79.3
ElGsWat, Mfg, TrdTrns, LabRur, HHRur		.001	2.119	.002	1.0	80.2
ElGsWat, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.001	1.893	.001	.6	80.8
ElGsWat, LabUrb, HHUrb, Fishery, LabRur, HHRur		.001	2.082	.002	.7	81.5
ElGsWat, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.001	1.938	.003	1.1	82.6
ElGsWat, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.001	1.985	.002	.7	83.2
ElGsWat, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.002	2.043	.003	1.3	84.5
ElGsWat, LabUrb, HHUrb, PubServ, LabRur, HHRur		.002	1.926	.004	1.8	86.3
ElGsWat, LabUrb, HHUrb	.197	.084	1.389	.116	58.8	58.8
ElGsWat, EnrgMin, LabUrb, HHUrb		.001	1.448	.002	.8	59.6
ElGsWat, Mfg, LabUrb, HHUrb		.005	1.717	.009	4.7	64.3
ElGsWat, TxtAprl, LabUrb, HHUrb		.001	1.841	.001	.5	64.8
ElGsWat, OthInd, LabUrb, HHUrb		.001	1.504	.001	.6	65.5
ElGsWat, Cnstrct, LabUrb, HHUrb		.001	1.405	.001	.4	65.8
ElGsWat, TrdTrns, LabUrb, HHUrb		.003	1.565	.005	2.5	68.3
ElGsWat, PrivSrv, LabUrb, HHUrb		.001	1.607	.001	.6	68.9
ElGsWat, Capital, Entr, HHUrb		.008	1.394	.011	5.7	74.7
ElGsWat, Mfg, TrdTrns, LabUrb, HHUrb		.001	1.919	.002	1.1	75.7
ElGsWat, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.001	1.893	.002	1.0	76.7
ElGsWat, LabRur, HHRur, Pig, LabUrb, HHUrb		.001	1.829	.002	.8	77.6
ElGsWat, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.829	.001	.5	78.1
ElGsWat, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.001	1.938	.002	1.2	79.3
ElGsWat, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.001	1.985	.002	.9	80.2
ElGsWat, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.002	2.043	.003	1.6	81.8
ElGsWat, LabRur, HHRur, PubServ, LabUrb, HHUrb		.001	1.926	.003	1.4	83.2

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
Cnstrct, LabRur, HHRur	.352	.124	1.411	.175	49.7	49.7
Cnstrct, Forest, LabRur, HHRur		.001	1.558	.002	.5	50.2
Cnstrct, EnrgMin, LabRur, HHRur		.019	1.469	.028	8.0	58.2
Cnstrct, Mfg, LabRur, HHRur		.015	1.740	.026	7.3	65.5
Cnstrct, OthInd, LabRur, HHRur		.001	1.520	.002	.5	66.0
Cnstrct, ElGsWat, LabRur, HHRur		.001	1.574	.002	.5	66.5
Cnstrct, TrdTrns, LabRur, HHRur		.017	1.577	.027	7.8	74.3
Cnstrct, PrivSrv, LabRur, HHRur		.004	1.646	.007	2.0	76.2
Cnstrct, PubServ, LabRur, HHRur		.001	1.526	.001	.2	76.5
Cnstrct, Capital, Entr, HHRur		.002	1.415	.003	.7	77.2
Cnstrct, EnrgMin, TrdTrns, LabRur, HHRur		.001	1.641	.001	.3	77.5
Cnstrct, EnrgMin, PrivSrv, LabRur, HHRur		.001	1.711	.001	.4	77.9
Cnstrct, EnrgMin, Capital, Entr, HHRur		.001	1.473	.001	.3	78.2
Cnstrct, Mfg, Forest, LabRur, HHRur		.005	1.917	.009	2.7	80.9
Cnstrct, Mfg, EnrgMin, LabRur, HHRur		.002	1.803	.004	1.1	82.0
Cnstrct, Mfg, ElGsWat, LabRur, HHRur		.001	1.930	.001	.3	82.3
Cnstrct, Mfg, TrdTrns, LabRur, HHRur		.002	1.930	.005	1.3	83.6
Cnstrct, TrdTrns, PrivSrv, LabRur, HHRur		.001	1.826	.001	.4	84.0
Cnstrct, TrdTrns, Capital, Entr, HHRur		.001	1.581	.001	.2	84.2
Cnstrct, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.001	1.724	.001	.3	84.4
Cnstrct, LabUrb, HHUrb, Fishery, LabRur, HHRur		.001	1.896	.001	.3	84.8
Cnstrct, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.001	1.765	.002	.5	85.2
Cnstrct, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.001	1.808	.001	.3	85.5
Cnstrct, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.001	1.860	.002	.6	86.1
Cnstrct, LabUrb, HHUrb, PubServ, LabRur, HHRur		.002	1.754	.003	.8	86.9
Cnstrct, LabUrb, HHUrb	.227	.060	1.260	.075	33.1	33.1
Cnstrct, EnrgMin, LabUrb, HHUrb		.008	1.315	.011	4.9	38.0
Cnstrct, Mfg, LabUrb, HHUrb		.012	1.566	.019	8.2	46.2
Cnstrct, OthInd, LabUrb, HHUrb		.001	1.366	.001	.4	46.6
Cnstrct, ElGsWat, LabUrb, HHUrb		.001	1.405	.001	.6	47.2
Cnstrct, TrdTrns, LabUrb, HHUrb		.017	1.420	.024	10.7	58.0
Cnstrct, PrivSrv, LabUrb, HHUrb		.005	1.459	.008	3.3	61.3
Cnstrct, Capital, Entr, HHUrb		.001	1.266	.002	.8	62.1
Cnstrct, EnrgMin, TrdTrns, LabUrb, HHUrb		.001	1.481	.001	.5	62.5
Cnstrct, EnrgMin, PrivSrv, LabUrb, HHUrb		.001	1.520	.002	.7	63.2
Cnstrct, EnrgMin, Capital, Entr, HHUrb		.001	1.320	.001	.3	63.6
Cnstrct, Mfg, EnrgMin, LabUrb, HHUrb		.001	1.624	.001	.6	64.2
Cnstrct, Mfg, TrdTrns, LabUrb, HHUrb		.002	1.750	.004	1.8	66.0
Cnstrct, Mfg, PrivSrv, LabUrb, HHUrb		.001	1.803	.001	.5	66.5
Cnstrct, TrdTrns, PrivSrv, LabUrb, HHUrb		.001	1.632	.002	.7	67.2
Cnstrct, LabRur, HHRur, Rice, LabUrb, HHUrb		.001	1.765	.001	.4	67.6
Cnstrct, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.001	1.724	.003	1.1	68.7
Cnstrct, LabRur, HHRur, Pig, LabUrb, HHUrb		.001	1.666	.002	.9	69.6
Cnstrct, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.665	.001	.6	70.2
Cnstrct, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.002	1.765	.003	1.3	71.5
Cnstrct, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.001	1.808	.002	1.0	72.5
Cnstrct, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.002	1.860	.004	1.7	74.3
Cnstrct, LabRur, HHRur, PubServ, LabUrb, HHUrb		.002	1.754	.003	1.5	75.8

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
TrdTrns, LabRur, HHRur	.446	.205	1.560	.319	71.5	71.5
TrdTrns, OtLvstk, LabRur, HHRur		.001	1.579	.002	.4	71.9
TrdTrns, ProcFd, LabRur, HHRur		.001	1.727	.001	.3	72.3
TrdTrns, Mfg, LabRur, HHRur		.003	1.911	.006	1.3	73.6
TrdTrns, OthInd, LabRur, HHRur		.001	1.678	.002	.3	73.9
TrdTrns, ElGsWat, LabRur, HHRur		.001	1.738	.002	.4	74.3
TrdTrns, Cnstrct, LabRur, HHRur		.001	1.577	.001	.2	74.5
TrdTrns, PrivSrv, LabRur, HHRur		.009	1.807	.016	3.6	78.1
TrdTrns, PubServ, LabRur, HHRur		.001	1.684	.002	.3	78.4
TrdTrns, Capital, Entr, HHRur		.006	1.564	.009	2.1	80.5
TrdTrns, ProcFd, Rice, LabRur, HHRur		.001	1.840	.001	.3	80.8
TrdTrns, Mfg, Forest, LabRur, HHRur		.001	2.105	.002	.5	81.3
TrdTrns, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.002	1.856	.003	.7	82.1
TrdTrns, LabUrb, HHUrb, Pig, LabRur, HHRur		.001	1.793	.001	.3	82.4
TrdTrns, LabUrb, HHUrb, OtLvstk, LabRur, HHRur		.001	1.793	.002	.4	82.8
TrdTrns, LabUrb, HHUrb, Fishery, LabRur, HHRur		.002	2.041	.004	.9	83.7
TrdTrns, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.003	1.898	.006	1.4	85.1
TrdTrns, LabUrb, HHUrb, Mfg, LabRur, HHRur		.001	2.166	.002	.5	85.6
TrdTrns, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.004	1.998	.007	1.7	87.2
TrdTrns, LabUrb, HHUrb, PubServ, LabRur, HHRur		.005	1.888	.010	2.3	89.5
TrdTrns, LabUrb, HHUrb	.392	.202	1.405	.284	72.6	72.6
TrdTrns, OtLvstk, LabUrb, HHUrb		.001	1.423	.002	.5	73.1
TrdTrns, ProcFd, LabUrb, HHUrb		.001	1.628	.001	.2	73.3
TrdTrns, Mfg, LabUrb, HHUrb		.002	1.732	.004	1.1	74.4
TrdTrns, OthInd, LabUrb, HHUrb		.001	1.519	.001	.2	74.6
TrdTrns, ElGsWat, LabUrb, HHUrb		.001	1.565	.001	.4	75.0
TrdTrns, PrivSrv, LabUrb, HHUrb		.011	1.615	.018	4.5	79.5
TrdTrns, PubServ, LabUrb, HHUrb		.001	1.543	.001	.2	79.7
TrdTrns, Capital, Entr, HHUrb		.005	1.409	.006	1.7	81.4
TrdTrns, ProcFd, Rice, LabUrb, HHUrb		.001	1.753	.001	.3	81.6
TrdTrns, LabRur, HHRur, Rice, LabUrb, HHUrb		.001	1.900	.002	.4	82.1
TrdTrns, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.002	1.856	.005	1.2	83.2
TrdTrns, LabRur, HHRur, OthCrop, Land, HHUrb		.001	1.856	.001	.4	83.6
TrdTrns, LabRur, HHRur, Pig, LabUrb, HHUrb		.002	1.793	.004	.9	84.5
TrdTrns, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.793	.002	.6	85.1
TrdTrns, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.003	1.898	.005	1.3	86.4
TrdTrns, LabRur, HHRur, Mfg, LabUrb, HHUrb		.001	2.166	.001	.3	86.8
TrdTrns, LabRur, HHRur, TxtAprl, LabUrb, HHUrb		.001	2.357	.001	.3	87.1
TrdTrns, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.003	1.998	.007	1.8	88.9
TrdTrns, LabRur, HHRur, PubServ, LabUrb, HHUrb		.003	1.888	.006	1.5	90.5

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
PrivSrv, LabRur, HHRur	.391	.145	1.628	.236	60.3	60.3
PrivSrv, OthCrop, LabRur, HHRur		.002	1.715	.003	.8	61.2
PrivSrv, OthCrop, Land, HHRur		.001	1.730	.001	.2	61.4
PrivSrv, OtLvstk, LabRur, HHRur		.001	1.648	.001	.2	61.6
PrivSrv, Fishery, LabRur, HHRur		.001	1.860	.002	.4	62.0
PrivSrv, EnrgMin, LabRur, HHRur		.001	1.694	.001	.3	62.3
PrivSrv, ProcFd, LabRur, HHRur		.003	1.809	.005	1.2	63.5
PrivSrv, Mfg, LabRur, HHRur		.004	1.999	.008	2.0	65.5
PrivSrv, OthInd, LabRur, HHRur		.002	1.751	.004	.9	66.5
PrivSrv, ElGsWat, LabRur, HHRur		.003	1.813	.005	1.2	67.7
PrivSrv, Cnstrct, LabRur, HHRur		.001	1.646	.002	.5	68.2
PrivSrv, TrdTrns, LabRur, HHRur		.006	1.807	.012	3.0	71.1
PrivSrv, PubServ, LabRur, HHRur		.006	1.753	.011	2.8	73.9
PrivSrv, Capital, Entr, HHRur		.006	1.631	.009	2.3	76.2
PrivSrv, ProcFd, Rice, LabRur, HHRur		.002	1.929	.005	1.2	77.5
PrivSrv, ProcFd, Rice, Land, HHRur		.001	1.936	.002	.4	77.9
PrivSrv, ProcFd, Fishery, LabRur, HHRur		.001	2.066	.001	.4	78.3
PrivSrv, ProcFd, TrdTrns, LabRur, HHRur		.001	1.992	.001	.3	78.5
PrivSrv, Mfg, Forest, LabRur, HHRur		.001	2.202	.003	.7	79.3
PrivSrv, Mfg, EnrgMin, LabRur, HHRur		.001	2.071	.001	.3	79.6
PrivSrv, Mfg, TrdTrns, LabRur, HHRur		.001	2.204	.001	.4	79.9
PrivSrv, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.002	1.910	.003	.8	80.7
PrivSrv, LabUrb, HHUrb, Pig, LabRur, HHRur		.001	1.846	.001	.3	81.0
PrivSrv, LabUrb, HHUrb, OtLvstk, LabRur, HHRur		.001	1.845	.002	.5	81.5
PrivSrv, LabUrb, HHUrb, Fishery, LabRur, HHRur		.002	2.100	.004	.9	82.4
PrivSrv, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.003	1.954	.006	1.4	83.8
PrivSrv, LabUrb, HHUrb, Mfg, LabRur, HHRur		.001	2.233	.002	.5	84.4
PrivSrv, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.002	1.998	.003	.9	85.3
PrivSrv, LabUrb, HHUrb, PubServ, LabRur, HHRur		.005	1.941	.009	2.4	87.6
PrivSrv, LabUrb, HHUrb	.371	.180	1.443	.259	69.9	69.9
PrivSrv, OthCrop, LabUrb, HHUrb		.002	1.546	.002	.6	70.5
PrivSrv, OtLvstk, LabUrb, HHUrb		.001	1.463	.001	.3	70.8
PrivSrv, ProcFd, LabUrb, HHUrb		.002	1.685	.003	.8	71.5
PrivSrv, Mfg, LabUrb, HHUrb		.003	1.784	.006	1.5	73.1
PrivSrv, OthInd, LabUrb, HHUrb		.001	1.561	.002	.5	73.6
PrivSrv, ElGsWat, LabUrb, HHUrb		.002	1.607	.004	1.1	74.6
PrivSrv, Cnstrct, LabUrb, HHUrb		.001	1.459	.001	.2	74.8
PrivSrv, TrdTrns, LabUrb, HHUrb		.006	1.615	.010	2.8	77.6
PrivSrv, PubServ, LabUrb, HHUrb		.004	1.581	.006	1.6	79.2
PrivSrv, Capital, Entr, HHUrb		.004	1.447	.006	1.7	80.8
PrivSrv, ProcFd, Rice, LabUrb, HHUrb		.002	1.814	.004	1.0	81.8
PrivSrv, ProcFd, Rice, Land, HHUrb		.001	1.827	.002	.4	82.2
PrivSrv, ProcFd, TrdTrns, LabUrb, HHUrb		.001	1.862	.001	.3	82.5
PrivSrv, Mfg, TrdTrns, LabUrb, HHUrb		.001	1.982	.001	.3	82.8
PrivSrv, LabRur, HHRur, Rice, LabUrb, HHUrb		.001	1.955	.001	.3	83.1
PrivSrv, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.002	1.910	.003	.9	84.0
PrivSrv, LabRur, HHRur, OthCrop, Land, HHUrb		.001	1.910	.001	.3	84.3
PrivSrv, LabRur, HHRur, Pig, LabUrb, HHUrb		.001	1.846	.003	.7	85.0
PrivSrv, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.001	1.845	.002	.4	85.5
PrivSrv, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.002	1.954	.004	1.0	86.5
PrivSrv, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.001	1.998	.003	.8	87.3
PrivSrv, LabRur, HHRur, PubServ, LabUrb, HHUrb		.002	1.941	.004	1.2	88.5

Path	Global Effect	Direct Effect	Path Mult	Total Effect	% of Global	Cum %
PubServ, LabRur, HHRur	.641	.336	1.508	.508	79.2	79.2
PubServ, Mfg, LabRur, HHRur		.003	1.859	.006	.9	80.1
PubServ, OthInd, LabRur, HHRur		.005	1.623	.008	1.3	81.4
PubServ, ElGsWat, LabRur, HHRur		.002	1.681	.004	.6	82.0
PubServ, Cnstrct, LabRur, HHRur		.001	1.526	.002	.2	82.2
PubServ, TrdTrns, LabRur, HHRur		.005	1.684	.009	1.4	83.7
PubServ, PrivSrv, LabRur, HHRur		.008	1.753	.014	2.2	85.9
PubServ, Capital, Entr, HHRur		.001	1.512	.002	.3	86.2
PubServ, Mfg, Forest, LabRur, HHRur		.001	2.048	.002	.3	86.5
PubServ, Mfg, TrdTrns, LabRur, HHRur		.001	2.061	.001	.2	86.7
PubServ, LabUrb, HHUrb, OthCrop, LabRur, HHRur		.002	1.800	.003	.5	87.2
PubServ, LabUrb, HHUrb, Pig, LabRur, HHRur		.001	1.739	.001	.2	87.4
PubServ, LabUrb, HHUrb, OtLvstk, LabRur, HHRur		.001	1.739	.002	.3	87.7
PubServ, LabUrb, HHUrb, Fishery, LabRur, HHRur		.002	1.979	.004	.6	88.3
PubServ, LabUrb, HHUrb, ProcFd, LabRur, HHRur		.003	1.843	.006	.9	89.2
PubServ, LabUrb, HHUrb, Mfg, LabRur, HHRur		.001	2.108	.002	.3	89.5
PubServ, LabUrb, HHUrb, TrdTrns, LabRur, HHRur		.002	1.888	.004	.6	90.1
PubServ, LabUrb, HHUrb, PrivSrv, LabRur, HHRur		.004	1.941	.007	1.1	91.2
PubServ, LabUrb, HHUrb	.429	.200	1.372	.274	63.9	63.9
PubServ, Mfg, LabUrb, HHUrb		.003	1.702	.004	1.0	64.9
PubServ, OthInd, LabUrb, HHUrb		.003	1.484	.004	1.0	65.9
PubServ, ElGsWat, LabUrb, HHUrb		.002	1.528	.003	.8	66.7
PubServ, Cnstrct, LabUrb, HHUrb		.001	1.388	.001	.2	66.9
PubServ, TrdTrns, LabUrb, HHUrb		.005	1.543	.008	1.9	68.8
PubServ, PrivSrv, LabUrb, HHUrb		.010	1.581	.016	3.7	72.5
PubServ, Capital, Entr, HHUrb		.001	1.377	.001	.3	72.8
PubServ, Mfg, TrdTrns, LabUrb, HHUrb		.001	1.899	.001	.2	73.0
PubServ, LabRur, HHRur, Rice, LabUrb, HHUrb		.002	1.843	.003	.6	73.6
PubServ, LabRur, HHRur, Rice, Land, HHUrb		.001	1.843	.001	.3	73.9
PubServ, LabRur, HHRur, OthCrop, LabUrb, HHUrb		.004	1.800	.007	1.7	75.6
PubServ, LabRur, HHRur, OthCrop, Land, HHUrb		.001	1.800	.002	.5	76.1
PubServ, LabRur, HHRur, Pig, LabUrb, HHUrb		.003	1.739	.006	1.4	77.5
PubServ, LabRur, HHRur, OtLvstk, LabUrb, HHUrb		.002	1.739	.004	.8	78.3
PubServ, LabRur, HHRur, ProcFd, LabUrb, HHUrb		.005	1.843	.008	2.0	80.3
PubServ, LabRur, HHRur, Mfg, LabUrb, HHUrb		.001	2.108	.002	.5	80.8
PubServ, LabRur, HHRur, TxtAprl, LabUrb, HHUrb		.001	2.286	.002	.5	81.3
PubServ, LabRur, HHRur, OthInd, LabUrb, HHUrb		.001	1.858	.001	.2	81.5
PubServ, LabRur, HHRur, TrdTrns, LabUrb, HHUrb		.003	1.888	.007	1.5	83.0
PubServ, LabRur, HHRur, PrivSrv, LabUrb, HHUrb		.006	1.941	.011	2.6	85.6